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# Railway Age

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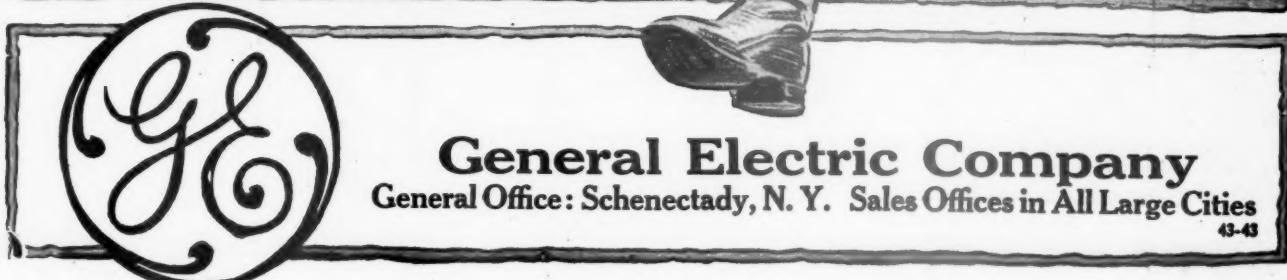
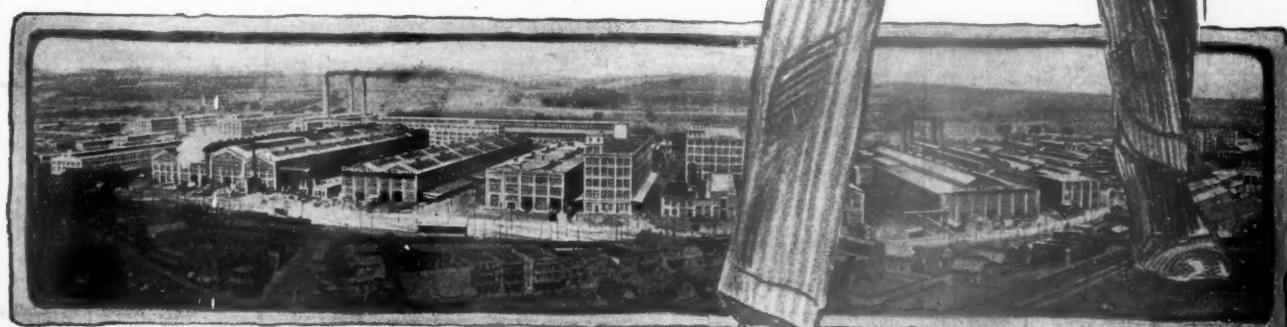
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# Railway Age

Vol. 65

August 23, 1918

No. 8



Chinese Coolies on Railway Work in France. French Official Photo. Copyright by Underwood & Underwood, N. Y.

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# EDITORIAL

Railway Age

For years the technical journals and associations of various kinds have been preaching fuel conservation and methods

**The Real Secret of Fuel Economy** for obtaining the most work from a pound of fuel. Countless books and articles have been written on the subject. We do not lack for information.

We do, however, lack in *execution*. A real, energetic and widespread propaganda to this end must be carried on throughout this country. On railroads in particular the economies to be effected are tremendous. A small percentage saved there means much to the country at large. The Railroad Administration has appointed fuel supervisors to assist in this great work. Absorb their enthusiasm. Put their suggestions into practice. Pass their messages along. There is not one who cannot do something to save coal. Results will only be obtained by everybody putting their shoulders to the wheel.

What if the railroads should fail in carrying the heavy traffic under the severe weather conditions that will confront them

**Are You Ready for Next Winter?** next winter? Will Director General McAdoo, or the Railroad Administration, accept the responsibility for the failure? Hardly. Suppose, for instance, that there should be a shortage

of power, or that the condition of the freight cars should be so bad that they cannot meet the service requirements. Will the mechanical officers not be pointedly reminded that they were warned last spring and asked to get the equipment into first class condition? If these officers have not done all they could to repair the equipment and, where it was possible, modernize it and increase its capacity, what excuse will they have to offer? There are sins of commission and sins of omission. The latter are sometimes overlooked and unnoticed, but hardly on the railroads in the present crisis. Twelve weeks or more remain before winter will be upon us. There is still time to do much in putting the equipment into better condition. If you cannot get labor or material put it up to the Railroad Administration and ask for help. It is strictly up to you to be a positive factor and do your full part.

Through Supplement No. 4 to General Order No. 27 the Railroad Administration has dealt most generously with

**Labor in the Mechanical Department** railway shop labor. It has been deemed necessary to grant the men increases which may prove reactionary if extreme care is not taken. With a general increase of about 30 per cent

added to already increased rates and with back pay coming from about eight months' work, the shop employees will receive what to them will be a large sum of ready money. Whether they receive such an increase in prosperity without a relaxation in their efforts depends much upon the manner in which this increase is given. This advancement of wages will make and has made railway work more attractive to the laboring world. It should make possible the obtaining of sufficient men properly to man the shops. It will tend, on the other hand, to increase absences from work. The manner in which the increases have been apportioned also ma-

terially decreases the stimulus of production through piece work. It will be necessary to increase the discipline to counteract these two evils. The men must be made to realize now as never before, the importance of their work in winning the war. If they do not respond there is the danger of conscription of the labor forces which none of us want, but which the public will demand if production can not be obtained in any other way.

The grouping of two or more railroads under one federal manager has resulted in economies in some instances,

**Compensation for Railway Officers** through the elimination of duplicate officers, and in most cases it may be said that this has been accomplished without undue hardship to the men relieved. In many instances they have been offered places made available through a series of demotions but usually they have secured other positions readily because of the present urgent demand for men of all classes who have a faculty for doing things. When, however, an attempt is made to standardize the salaries of corresponding positions on several roads grouped under one management by paring down the higher salaries, hardship, loss of spirit, and general dissatisfaction will be engendered to a degree that is entirely out of proportion to the savings in salary. An instance has recently been called to our attention where two division engineers of over 30 years' service, each receiving \$200 a month have had their salaries reduced to approximately \$150 a month because that was the rate paid to similar men on another road placed under the same federal management. This reduction was put into effect without any change in the duties or responsibilities of the men involved. This ignores the fact that repeated advances in wages to certain classes of employees have so reduced the spread between compensation to these employees and the officers that many men after long years of earnest effort find that they are receiving scarcely more compensation than a locomotive fireman after six months' service. Assuming that the two men referred to were worth the \$200 a month to the road which employed them, the reduction which they now suffer is surely a grave injustice. Decreases in pay in the face of the unprecedented advances in living expenses will dampen the ardor of the stoutest heart, and in these days when the railroads need the best that is in their officers, any measure that will tend to kill a man's enthusiasm or destroy his love for his work should be considered very carefully before it is adopted.

It is greatly to be regretted that Director General McAdoo in emphasizing the necessity for courtesy toward the public

**An Unfortunate Expression** on the part of the railway employees should have revived the unfortunate expression, the "public be damned."

Possibly he did not intend to have it stand out in his message as it does, and doubtless he overlooked the fact that the newspapers would not miss the opportunity of featuring it in their headlines. Railroad officers have worked hard and faithfully for years to gain the confidence of the public and to live down the

reputation of an attitude which in most cases was undeserved even in the early days of the Vanderbilts. It is not unreasonable to suppose that there would be numerous complaints on the part of the public because of the many curtailments that have been made in railroad service. The Railroad Administration rightfully has done all it consistently could to discourage passenger travel in order to make room for the enormous increase in freight traffic. The railroads have been operated shorthanded and under great difficulties. Magnificent as has been the attitude of the American public in adjusting itself to war conditions it has been a slow process. The public has had to be shown that reduced service was necessary, and in many cases it has been impatient and harsh in its judgments during the process of readjustment—a certain part of the public will find pleasure in filing complaints in Washington at any time and under any circumstances. Meanwhile the unfortunate expression mentioned above will not be at all helpful in upbuilding and strengthening the morale among railway officers and employees. A quiet investigation of the complaints and the discharge of the offenders if found guilty would be much more effective, particularly if coupled with a "Public be Pleased" campaign.

### Waste of Man-Power

ONE OF THE MOST DIFFICULT and unpleasant parts of a railroad executive's work was to be continually on the lookout for small leaks. Every railroad man is familiar with the numerous devices which were adopted in an attempt to make general rules which would automatically prevent waste. The rule that some roads had that no new man could be put on the payrolls without endless red tape was designed for this purpose, although it often acted in just the opposite way and useless men were kept on the payrolls because of the fear that they might later be needed and then permission could not be obtained to add a new name. It was, of course, money waste which the executives' efforts were bent upon preventing but no set of rules was an effective substitute for continual individual supervision and earnest thought and care.

Now, under the government regional organization, there is a tendency on the part of every one, officers as well as employees, to lay less stress on the necessity for saving money. This ought not to be so, but it is a fact. There is a real danger that sufficient stress will not be laid upon the fact that conservation of man-power is just as vital to the needs of the country and the proper and effective operation of the railroads as was the necessity for economy to the profitable operation of the railroads for the stockholders. The same loyalty to the man who pays the salary which compelled minute and constant efforts to prevent small wastes under private operation ought now to inspire the railroad officer to bend every effort to save man power for the government which is paying his salary.

In the same way that it was the railroad executive who bore the heaviest part of this burden of preventing small wastes, so now it will be the regional directors and the Railroad Administration which will have to bear the heaviest part of this unpleasant burden. Every new suggestion ought to bear as careful scrutiny now to see if there is waste of man-power in it as did a new proposal formerly to see if there was waste of the stockholders' money. All existing stationery and forms now have to be stamped or printed showing the Railroad Administration superimposed on the particular railroad company using the paper or forms. This may have been necessary but it is one of those things which should be undertaken only after the most careful consideration, for in it lies a large consumption of man-hours for which the justification is not obvious. There are literally thousands of

other chances for waste which might be mentioned but they are familiar to every railroad officer. It is natural when a new general manager takes possession of a set of offices for him to want to have them rearranged to meet his particular requirements; but with the extensive changes which are being made under government control and the great shifting about of organizations, there will be a rather appalling waste of carpenters' work if no attempt is made to utilize the facilities which are already in existence. And so on *ad finitum*.

The Railroad Administration and the regional directors themselves will of necessity have to set an example in this respect if they hope to be successful in inculcating the proper spirit of man-hour saving in their subordinates.

### Improvement Program Badly Delayed

THE FACT THAT ONLY 25 per cent of the five hundred million dollars authorized for Additions and Betterments had been spent on June 30 is not surprising to railway men conversant with conditions. At the same time it is an indication that only a part of the improvement work now under way will be completed in sufficient time for the roads to gain the benefit from it this winter. This is not an encouraging outlook in view of the marked need for increased facilities, and particularly engine terminal facilities, which was so evident last winter. The unusually limited progress which is being made this year is the result of a number of conditions, some of which are common to all forms of construction work. The shortage of labor and the difficulty and delay in securing materials are retarding all building construction and even if these were the only difficulties, work would be seriously delayed.

However, the centralization of control has contributed largely to the delay in the prosecution of improvement work on the railways. Following the taking over of the roads by the government, construction work was consolidated under the Division of Capital Expenditures at Washington, and it has since been necessary to secure authorization from this bureau before work of any magnitude can be undertaken. While this was a necessary step to co-ordinate the railway construction needs of the different properties in order to give preference to those most urgent from the standpoint of the roads as a whole, it resulted in delaying the opening of the work for several weeks in the spring while the roads were preparing budgets and securing approval from the regional directors and the Division of Capital Expenditures. The result was that in spite of the pressing need for improvements and the importance of starting work at the earliest practical date, relatively little work was authorized until May, and two months of the construction season were largely lost. As a matter of fact a relatively large amount of work is even now being placed under contract at this late date.

Another result of centralizing the responsibility for improvement work in Washington has been the natural tendency on the part of the men on the individual roads to leave the pushing of the work of this character to the central organization. To check this tendency the Division of Capital Expenditures and the regional directors are now creating inspection forces which will keep their respective offices in touch with the progress being made on the different projects and enable them to apply the pressure formerly applied by the local managements. In view of the pressing need for the facilities and the unusual difficulties confronting construction work of all kinds in addition to that inherent in the present railway situation, it is to be hoped that every railway man having to do with work of this character will exert his maximum effort to push the work to the earliest possible date of completion.

## Private Enterprise or State Socialism?

HERE IS GOING to be a "war after the war" in the United States. It will take the form of a struggle over the question whether the American system of private enterprise in industry is to be continued, or the Prussian system of state socialism is to be substituted for it. Every day some new proposal for government ownership and operation is put forward.

Such proposals are of more or less importance according to the prominence or prestige of those who make them and the publicity they receive. If any or all of the members of the Federal Trade Commission should advocate some socialistic scheme in their individual capacities it would be of no consequence, since the Commission is composed of men whose unofficial views are of no moment. When, however, the Commission in a report recommends government ownership and operation of large properties the recommendation derives importance from its official character. The Commission has found, or thinks it has found, that the five large meat packing concerns have got the producers and consumers of livestock at their mercy because they have acquired control of the market for livestock and of the marketing facilities, and to some extent, of the rolling stock which transports livestock to market. In consequence it recommends permanent government ownership and operation of the "principal and necessary stockyards of the country," of "all privately owned refrigerator cars and all necessary equipment for their proper operation" and of "such of the branch houses, cold storage plants and warehouses as are necessary to provide facilities for the competitive marketing and storage of products in the principal centers of distribution and consumption." These various facilities, the Commission recommends, shall be acquired through and operated by the Railroad Administration. The Railroad Administration is a temporary agency created to operate the railways during the war. How the Commission would have the stockyards, refrigerator cars, etc., operated after the Railroad Administration has ceased to exist it does not indicate.

It would appear that the Commission proceeds on the assumption that government operation of the railroads is to be permanent. The government has taken over the telegraph and telephone systems, and Postmaster General Burleson, who has been put in charge of them, apparently is proceeding on a similar assumption. Various persons and newspapers of some influence are vigorously and persistently advocating government operation of all coal mines and steamship lines.

There is hardly an argument which has been or can be advanced for government operation of railways, telegraphs and telephones, stockyards, coal mines, steamship lines, etc., which can not be advanced for government operation of other large industries. The *Railway Age* is especially interested in the issue of private versus government operation of railways. The recommendations made by the Federal Trade Commission are, however, but one of many illustrations that the railroad question is merely a part of the much larger question of private enterprise versus state socialism.

In the emergency of war the federal government, for more or less substantial reasons of national defense, has assumed the operation of some industries and adopted rigorous control of others. Even the western farmers, in spite of their great political power, have not escaped; they have had the price of their wheat fixed. Once the government has taken over the operation or control of any industry it is always easy to find reasons why operation or control by it should be continued. Already from the experience of war there are being drawn arguments in favor of extending the application of war emergency measures into the time of peace.

The situation which has developed is curious. The advocates of government ownership, most of whom are socialistic

in their tendencies, and many of whom have been mixed up in pacifist and pro-German propaganda, are trying, from our experience with government activities during the war, to draw arguments in favor of state socialism after the war. The owner of the largest group of newspapers and magazines in the United States is through these publications vigorously advocating state socialism. The attorney general of the state of New York recently alleged he had evidence that on at least one occasion Bolo Pasha, recently executed by the French government as a traitor, and Count von Bernstorff, who was then the German ambassador to this country, met at the home of this particular publisher. On the other hand, many individuals and publications whose patriotism in the past has been beyond question are now refraining from criticising Government activities during the war and from drawing from them conclusions adverse to government management because they fear it would be charged that the utterance of such criticisms and the drawing of such conclusions were unpatriotic.

Doubtless it would be far more desirable from the standpoint of both war and peace for the American people to settle their questions of war in time of war and defer the settlement of their questions of peace until the return of peace. But the question of what kind of economic and industrial system we are going to have in this country after the war is second in importance only to the question of what means we must use to win the war. Therefore, when it appears that some are deliberately trying to use the war emergency to promote socialistic projects, and when the advocates of state socialism persist during the war in advocating their system for both war and peace, it becomes not merely inexpedient, but absolutely unpatriotic, for the opponents of state socialism to refrain from weighing and discussing even important war measures with a view not only to their working during the progress of the war, but also to the effect which the way they are now carried out may have on conditions after the war.

There is one significant feature of the Federal Trade Commission's report which seems to have been generally overlooked. This is that in very large measure it is a condemnation of the Interstate Commerce Commission. A large, and probably the larger, part of the power the Trade Commission alleges has been acquired by the packers is due to their control and operation of live stock cars, refrigerator cars and terminal railroads. Now, for years the Interstate Commerce Commission has had control over these facilities by the exercise of which it could have adequately protected the railway companies and the producers and consumers of live stock. Therefore, if the packers have been allowed to so use these facilities as to injure the public it has been due to the inactivity of the Interstate Commerce Commission. Certainly, the fact that the harm which has been done by the packers—if, indeed, harm has been done by them—could have been largely prevented if an important government body had exercised the authority it possessed can hardly be construed into an argument for giving greater authority to another government body.

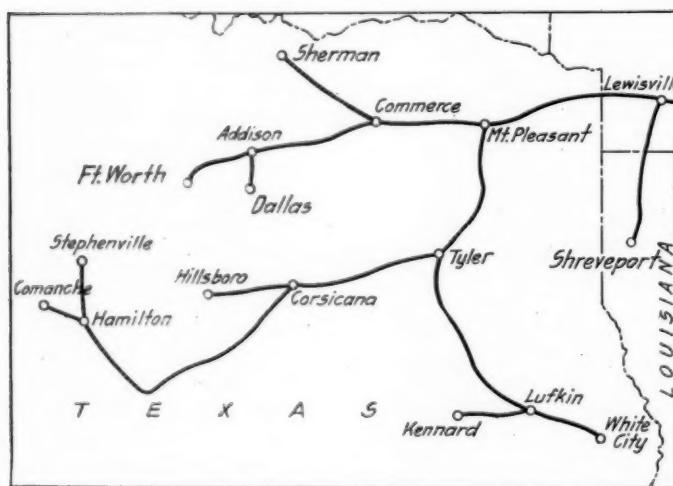
The *Railway Age* holds no brief for the packers. They have never been, in our opinion, distinguished by philanthropy in their treatment of the railways or the public. At the same time, we are constrained to express the opinion that most of the report of the Federal Trade Commission, and especially that relating to transportation facilities owned by the packers, is tommy-rot of just the kind that might have been expected from a commission that would employ Francis J. Heney as its chief investigator; that its recommendations are simply a part of the general movement for state socialism in this country; and that they have no importance except as a part of that movement. The real question is not whether the government shall become owner and manager of the stockyards, private refrigerator car lines and other properties of the packers, but whether in these, as in other lines,

the principle of state socialism, which has been exemplified on the largest scale in Germany, shall or shall not be substituted in the United States for the principle of private enterprise the application of which has been most largely exemplified in this country.

There are many persons who believe that the government is incompetent successfully to regulate private enterprise but is competent to manage large industries. There are many other persons who believe the government, so long as this country remains a democracy, can not be made competent to manage large industries, but that it is competent to regulate private management of large industries and that this is its proper function. Let us hope that we shall not, from the motive of false patriotism, allow the country to become so far committed to state socialism during the period of the war that it will be rendered unable to withdraw from it after the war.

### St. Louis Southwestern

IT IS VERY RARE to find a road which has increased its average train load by 100 tons in a single year, but the comparatively few instances where this has been done are for the most part coal roads or roads already having a large average train load. The St. Louis Southwestern's increase in train load in 1917 was remarkable because of the very high percentage which the increase represented. On the St. Louis Southwestern, outside of Texas, the average train load in the calendar year, 1916, was 486 tons; in 1917 it was 617 tons, an increase of 131 tons, or 27 per cent. Although the traffic was diversified, it was not apparently any better balanced. Thus, the number of empty cars per train was 7.82 in 1917 as against 6.69 in 1916, and the percentage of northbound tonnage in 1917 was 59.77 and of southbound



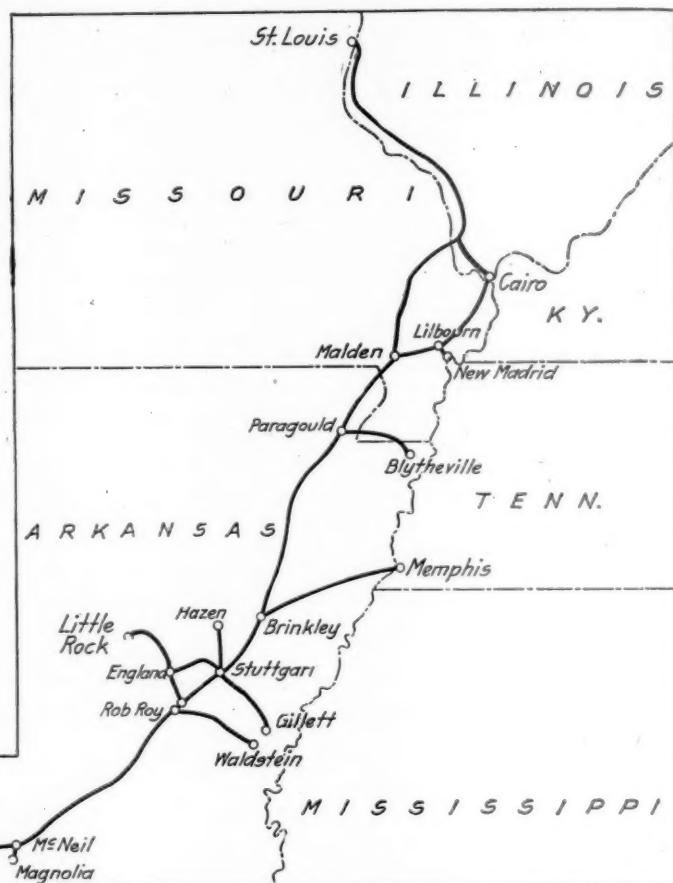
The St. Louis Southwestern

tonnage 40.23, while in 1916 the percentage of northbound was 56.18 and of southbound 43.82. The Cotton Belt received 21 locomotives during the year; 8 of them superheated 10-wheel locomotives and 12 superheated Consolidations. The total increase in the tractive power at the end of 1917 as compared with the end of 1916 was 11.11 per cent.

The Texas lines were not able to make quite as good a showing in increasing train load, the average in 1916 being 251 tons and in 1917 286 tons; but an increase of 14 per cent is a thoroughly creditable showing.

The real achievement made in increasing the train load was presumably responsible in considerable part for the results obtained in holding down operating expenses and

especially transportation expenses in the face of the increases in wage scales and unit costs of fuel. In 1917, the Cotton Belt earned \$17,310,000, an increase of \$3,459,000 or just about 25 per cent over 1916. The total number of passengers carried was 3,059,000, an increase of 14 per cent, but the average length of passenger journey was over 43 miles as compared with less than 37 miles in 1916, so that the number of passengers carried one mile increased over 31



per cent. The rate received per passenger per mile was 2.48 cents, a decrease of about 3 per cent. The total number of tons of freight carried one mile was 1,271,000,000, an increase of 33 per cent.

With these very large increases in the amount of business handled, operating expenses amounted to \$10,897,000, an increase over 1916 of only 17 per cent. Maintenance of way expenditures were increased by 9.68 per cent and maintenance of equipment by 13.48 per cent. The out-of-pocket cost of handling the business (transportation expenses) amounted to \$5,031,000, an increase of 24.25 per cent. This is an extraordinarily fine showing. More economical and efficient operating methods are indicated by almost all of the detailed figures for transportation expenses. Thus, engine service expenses, which include enginemen's wages, water, fuel and lubricants for locomotives, amounted to \$1,857,000, an increase of \$311,000; but of this increase \$106,000 was in enginemen's wages which could not have been far from the added burden of increased wage scales, and \$155,000 was increase in cost of fuel for train locomotives.

Prior to 1916, the St. Louis Southwestern had been allowed to get in rather bad shape, especially in regard to repairs of equipment, and, furthermore, the morale of the operating organization was probably somewhat disturbed by the conditions existing in the general offices. When J. M. Herbert took hold of the property late in 1915, there were a number of conditions which required immediate attention and vigorous

and decided action. In 1916, the showing made in overcoming these conditions was excellent. The drastic program of rebuilding freight cars had been undertaken and was well under way. The decision shown in attacking problems that were left over from the years previous, did wonders toward toning up the morale of the officers and employees and the results obtained in 1917 are really as much attributable to the fearless handling of the situation in 1916 as they are to improvement in conditions in 1917.

In 1917 there was a total of \$1,204,000 spent for additions and betterments to road, and \$257,000 for additions to equipment. The only financing which the company had to do was in connection with its share of the building of the Arkansas & Memphis bridge and terminal. The outstanding bonds of the St. Louis Southwestern were decreased during the year by the purchase of \$670,000 first consolidated mortgage bonds under the sinking fund plan and the payment at maturity of \$118,000 series E equipment bonds and the payment before maturity of \$690,000 of these equipment trust bonds and the paying off of small amounts of other bonds.

The Arkansas & Memphis is a company formed to build a bridge across the Mississippi River at Memphis, Tenn. The company is owned jointly by the Chicago, Rock Island & Pacific, the Missouri Pacific and St. Louis Southwestern. There were \$6,000,000 Arkansas & Memphis first mortgage bonds issued but conditions were such that these bonds could not be sold on any reasonable basis and they were, therefore, deposited as security for \$5,000,000 three-year 6 per cent notes. These notes were sold and in addition each one of the three proprietary companies advanced \$170,000 to the bridge company. The notes fell due on January 1, 1918, and the three proprietary companies re-financed the bridge company by taking \$836,000 stock and \$1,250,000 bonds of the bridge company; to carry out its share of this program the St. Louis Southwestern had to borrow \$1,227,000. The balance sheet on December 31, 1917, shows this amount under loans and bills payable, but since the close of the calendar year \$562,000 has been paid off on this loan, so that there remain only \$665,000 bills payable. On December 31, 1917, there was \$1,295,000 cash on hand.

The St. Louis Southwestern is in a rather peculiar situation as regards making its contract with the government. In at least one of the three years which are to be taken to make the average standard return which the government is to pay as rental, the conditions on the St. Louis Southwestern were such that the accounts for that year probably do not reflect accurately the facts. Furthermore, the expenditures necessitated in 1916 were due to extraordinary causes for which it would hardly seem to be in keeping with the spirit of the President's proclamation, taking over the roads, to penalize the St. Louis Southwestern stockholders. The company is now negotiating with the government in regard to the contract and it may have been that the council report was held up until this rather late date with the hope that negotiations would have been brought to a close.

The following table shows the principal figures for operation in 1917 as compared with 1916:

|   | 1917         | 1916         |
|---|--------------|--------------|
| Average mileage operated.....                     | 1,754        | 1,754        |
| Freight revenue .....                             | \$13,062,975 | \$10,369,943 |
| Passenger revenue .....                           | 3,284,490    | 2,579,364    |
| Total operating revenues.....                     | 17,309,657   | 13,850,130   |
| Maintenance of way and structures.....            | 1,777,729    | 1,620,812    |
| Maintenance of equipment.....                     | 2,915,460    | 2,569,125    |
| Traffic expenses .....                            | 564,420      | 546,912      |
| Transportation expenses .....                     | 5,031,343    | 4,049,331    |
| General expenses .....                            | 590,452      | 536,503      |
| Total operating expenses.....                     | 10,896,860   | 9,318,306    |
| Taxes .....                                       | 1,075,096    | €15,814      |
| Operating income .....                            | 5,336,371    | 3,913,634    |
| Gross income .....                                | 7,159,500    | 5,438,929    |
| Net income .....                                  | 3,873,458    | 2,222,165    |
| Applied to sinking funds.....                     | 412,860      | ...          |
| Appropriated for investment and physical property | 971,390      | 132,580      |
| Surplus .....                                     | 2,489,208    | 2,089,585    |

## Letters to the Editor

### The Proposed Amalgamation of Railway Associations

NEW YORK.

TO THE EDITOR:

I have read with a great deal of interest the editorial in your issue of August 2 on "The Proposed Amalgamation of Railway Associations" and I wish to endorse most heartily everything which you have said and to congratulate you on the way you have said it.

In response to a circular sent out by the American Railway Engineering Association I have already registered a protest against an amalgamation which will tend to destroy the individuality of these associations and especially one, as you point out, which may eliminate from membership all those who are not actually or actively connected with the railways of the United States.

I myself have not been actively connected with a railway organization in the United States, except in a consulting capacity, for over 10 years, but I feel that I have received more benefit from my membership in the American Railway Engineering Association than I can well express, and it would not only be a matter of regret to me to have this association severed or its usefulness reduced in any way, but would also lessen my own efficiency by eliminating one of the most important means of keeping in touch with current practice and developments, which I may need to apply in foreign countries.

F. LAVIS,  
Consulting Engineer.

### The Virginian Air Brake Tests

PITTSBURGH, Pa.

TO THE EDITOR:

Having read with much interest the article in the July 26 issue of the *Railway Age*, describing the 100-car freight train test of Automatic Straight Air brakes on the Virginian Railway and having received a number of inquiries from railroad officials regarding them and the comparisons made with Westinghouse brakes, I trust that—inasmuch as half of the tests at least were conducted for comparison with equipment manufactured by the Westinghouse Air Brake Company—you will favor me with the opportunity of offering a few observations, based on the comparisons mentioned.

Concurring in the expression of your representative to the effect that "Undoubtedly, the most important consideration in estimating the value of any device having to do with train control is the degree of safety of train operation attending its use. A braking system, to be highly successful, must be capable of retaining the train constantly under a control which not only provides against the loss of life, but also protects the equipment and lading in the train from damage in the face of any situation which reasonably may be expected to arise"; it must be recognized that in order to obtain these results, certain fundamental principles which are absolutely essential must be inherent in the design of such device. Furthermore, taking into consideration that there are over two million freight cars in the United States and Canada, it is essential that any new equipments or improvements over the existing equipment must interchange in a way that, if they do not increase the efficiency thereof or improve upon existing performance, they will at least not reduce this performance to one less satisfactory than at present.

It will also be recognized that to the "degree of safety" factors must be added those factors which will permit of flexible control of the brake and consequent non-interference with transportation since the capacity of a railroad is dependent very largely upon the degree of flexible operation of the brake equipment.

Without any desire to criticise the report or attempt to draw your representative into any extended discussion on the comparative merits of the two forms of brakes tested, there are certain results recorded for which no explanation appears to be made and as the Westinghouse equipment was used as a basis of comparison it seems to me that until a more complete analysis of the performance of the brake is made the reasons for the results obtained must remain more or less obscure to the reader.

If my understanding of the report is correct, there were three break-in-twos going down the grade between Princeton and Rich Creek and two stalls, over a distance of fifteen miles, and another break-in-two between Roanoke and Victoria, to say nothing of the additional break-in-twos that occurred east of Victoria.

There does not appear to have been more than one run made over this grade and none with the train equipped with all Westinghouse brakes, but suffice it to say that if occurrences of the kind reported were common practice, the railroads of this country would be seriously handicapped, especially over grades such as exist on Western roads or on the Eastern slope of the Allegheny mountains, where frequency of trains or headway is so close that trains are almost a continuous line.

The importance of "Retaining trains constantly under a control which not only provides against the loss of life, but also protects the equipment and lading in the train from damage" has long been recognized by air brake manufacturers and the efforts of the best railroad as well as air brake engineering talent in the country has been drawn on for years in an endeavor to accomplish the result desired and in the most practical way.

Lest I be misunderstood regarding the graduated release, quick release and brake cylinder maintenance features of which much is claimed for the ASA brake, permit me here to mention the fact that these features have been embodied in a number of earlier forms of brake devices brought out by patents, for example of Baxter, Sauvage, Turner, Dukesmith, Goodnight, Sinclair, Dixon, Guillemet, Chapsal, McElroy, Normand, Krimmelbein, Marsh, Williams, Moore, Riggs and others. (In fact, the cylinder pressure maintenance feature was one of the first patents taken out by George Westinghouse), and while many of the aforesaid features were attractive and spectacular in test rack demonstrations, they developed the same lack of flexibility and successful performance when placed in service as were demonstrated by the number of break-in-twos and stalls that took place in the tests mentioned.

The results obtained were quite natural, for the reason that the physical conditions which limit the flow of air through piping, the time element which is governed by the laws of nature, and the mechanical limitations (not to speak of the cost of apparatus) are such as to prohibit the incorporation of these features in long train service without the necessarily unavoidable break-in-twos and stalling of trains such as occurred. In passenger service where the trains are of shorter length these features have been worked out to a practical state of development and are, therefore, operating satisfactorily in every day service at the present time.

There are quite a number of points in the article bearing on both the ASA and the Westinghouse equipment on which further enlightenment would be of interest and which will possibly be brought out in more detail in the report of the Interstate Commerce Commission. One additional point might be mentioned, however, and that is with reference to the

relative amount of air required for the two air brake systems in question. On the single grade test mentioned a locomotive was used on which two new 8½-in. cross compound compressors (300 cu. ft. displacement) were installed just prior to making the run. Whether this capacity is required for the ASA brake is not brought out, but it is certainly not necessary for the Westinghouse equipment, with which trains of similar length are being handled every day in similar service with a single cross compound compressor or even a single 11-in. compressor (66 cu. ft. displacement). Further information on this point would be of interest to ourselves and possibly to your readers as well.

Before closing I wish to take this opportunity of stating that from our long experience as air brake manufacturers no one has recognized more than have we the desirability of some improvements in brake equipment to meet changed conditions in train operation since the present recognized standard equipment was developed. As is known by many railroad officials such an equipment has been developed, but owing to the financial condition of the railways for the past few years, the introduction or demonstration of such devices has been discouraged. It is, therefore, very gratifying to know that the government has now taken cognizance of this important question, and with the assurance that an equipment accomplishing these many desired features is ready for a demonstration, I am in hopes that an opportunity will be afforded for conducting tests in actual service which will not be confined to a *single trip down a hill*, but cover the entire range of representative train operation, and with the equipment in average every day working condition.

A. L. HUMPHREY,  
Vice-president, Westinghouse Air Brake Company.

## Comparison of Chinese and Japanese Railways

WASHINGTON, D. C.

TO THE EDITOR:

There are a few corrections which should be made in the report which appeared in your issue of June 28, 1918, of the remarks which I made at the National Foreign Trade Convention at Cincinnati last April.

At the top of page 1568 I am quoted as saying, "Manufacturing in Japan is typically along the line of private manufacturing." This should read, "Manufacturing of railway materials in Japan is typically along the line of fostered and protected private manufacturing."

In the first paragraph under "The Japanese in China," on page 1568, the words "Thiazin color" should read "Fushun collieries."

Near the bottom of the second column on page 1568 the statement appears that "There is 152 miles in a branch from Harbin to Chang Sha." The latter city should be Changchun. There is a city named Chang Sha, but it is 1,500 miles from Harbin.

The first paragraph under "Chinese Railways Lightly Equipped," on page 1569, contains the statement that "there is ¾ of a goods car per mile of line in China." This should read, "three and a quarter goods cars per mile of line," and compares with 7.6 goods wagons in Japan, 9.8 freight cars in America, and 17½ goods wagons in Germany; all larger than the Chinese goods wagons.

The first full sentence in the second column of page 1569 should read, "This restricting loan control is losing its effect to a certain extent by the amortizing of the loans and the Chinese gradually taking hold of it, but that has a long time to run and they are needing all the earnings which they have to put back into property to take care of the constantly growing business."

FRANK RHEA,

Commercial Agent, Bureau of Foreign and Domestic Commerce.



M. P. Blauvelt.  
Assistant Regional Director.

C. H. Markham.  
Regional Director.

L. W. Baldwin.  
Operating Assistant.



J. B. Fisher.  
Transportation Assistant.



J. T. Carroll.  
Mechanical Assistant.



E. B. Temple.  
Engineering Assistant.



Chas. R. Capps.  
Traffic Assistant.

## The Allegheny Region—Operating Conditions

**A Network of 11,985 Miles of the Densest Traffic Railroad in  
the United States; Coal, Iron and War Materials**

THE RAILROADS on which congestion was worst in 1917 are among those included in the Allegheny region which has been placed in charge of C. H. Markham as regional director. This region includes the Pennsylvania Lines East, the Baltimore & Ohio east of Pittsburgh and the Ohio River, the Bessemer & Lake Erie, the Cumberland Valley, the Central Railroad of New Jersey, the Coal & Coke, the Philadelphia & Reading, the Western Maryland, the Cumberland & Pennsylvania and the Pittsburgh & Lake Erie. This region has been created only within the last three months and no attempt, therefore, will be made to discuss at length and in detail the results which have been obtained in this short period. The regional management itself is still engaged in the study of conditions, and an outline of what these conditions—operating and traffic—are, is all that will be attempted here. Even this cannot be done completely and definitely because, although figures for operating and traffic statistics are obtainable for the Pennsylvania Lines East, the corresponding figures for the Baltimore & Ohio Lines East are not available.

Coal, of course, is far and away the most important single commodity moved on all of these roads in the Allegheny region. The Pennsylvania Lines East in 1917 handled 50,205,000 tons of bituminous coal, 10,721,000 tons of anthra-

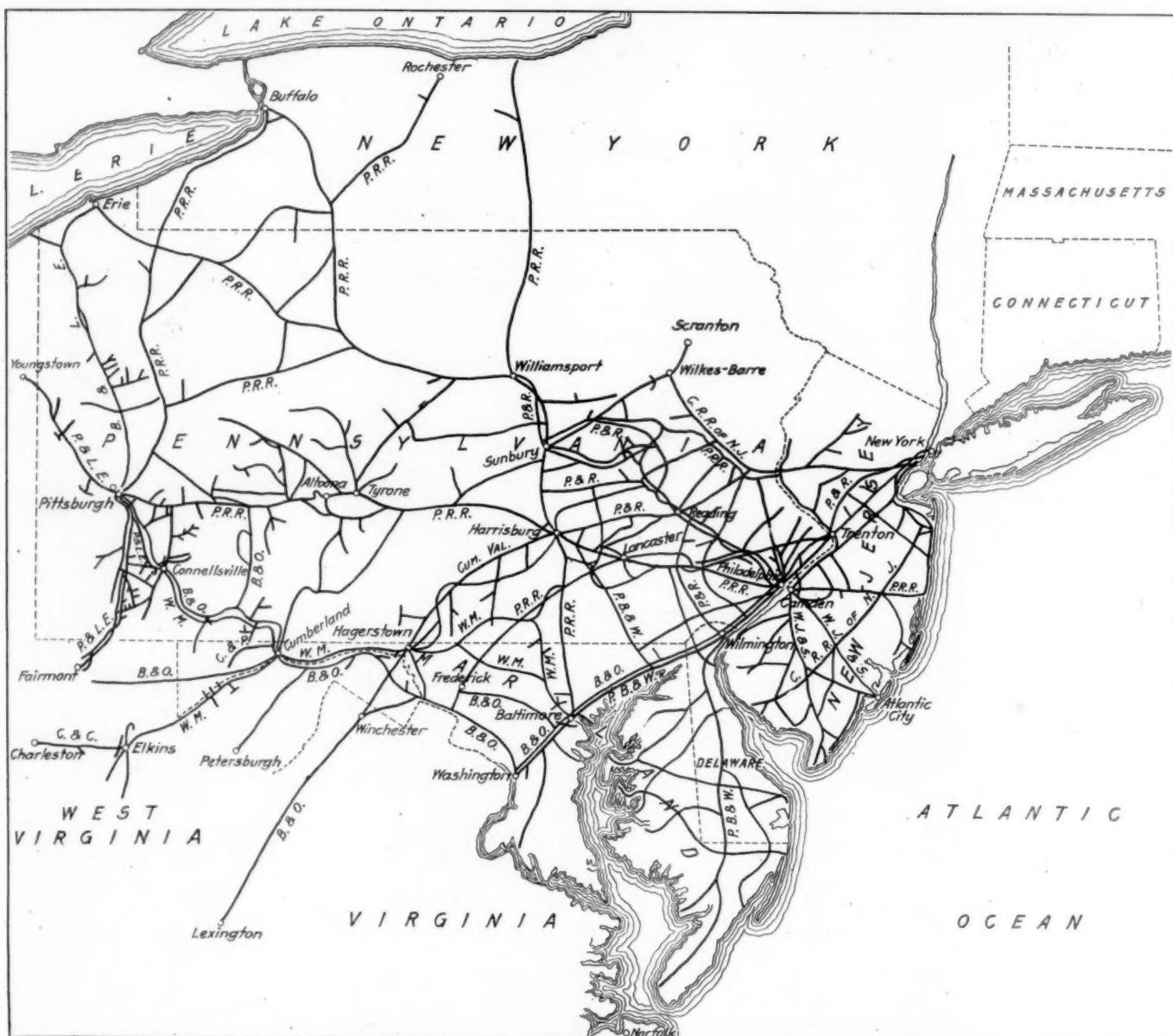
cite coal and 14,482,000 tons of coke. The Philadelphia & Reading moved 21,307,000 tons of bituminous coal and 12,977,000 tons of anthracite coal in 1916 (the last period for which figures are available). The Western Maryland moved 9,314,000 tons of bituminous coal and 515,000 tons of anthracite coal in 1917. The Pittsburgh & Lake Erie moved 11,437,000 tons of bituminous coal and 7,566,000 tons of coke in 1917. The figures for the Baltimore & Ohio cannot be given because the company's annual report lumps together both the Lines East and Lines West. It is safe to say that more than 50 per cent of the traffic carried by all of the roads is products of mines—coal, coke, ore, sand and stone. A very considerable part of the remainder of the traffic is made up of heavy manufactures, moving, of course, in carload lots. Rails, steel castings, naval stores, and bar and sheet metal bulk very large in the total traffic, more especially, in that of the Pennsylvania, Baltimore & Ohio and Pittsburgh & Lake Erie, but also in all of the roads in the Allegheny region.

### Competitive Conditions

Prior to government control, competitive conditions in the Allegheny region were roughly as follows: The Pennsylvania Railroad dominated this entire section of the country.

To a considerable extent it dominated the Baltimore & Ohio, although no longer owning a large block of Baltimore & Ohio stock. It also controlled the Cumberland Valley up until a few years ago. The Baltimore & Ohio controlled, through holdings of a large block of Reading stock, the Philadelphia & Reading and its controlled line, the Central of New Jersey. The smaller roads, such as the Coal & Coke and Cumberland & Pennsylvania, did not, of course, play an important part in the competitive conditions over the region in general. The Western Maryland was a keen competitor with the Baltimore & Ohio, especially at Baltimore. The

from Washington, the Baltimore & Ohio was in competition with the Pennsylvania. It should be remembered, however, that competition within the region had for a number of years been regulated to a considerable extent through the policy, which the Pennsylvania was the first to adopt, of community of interests between railroads. It was very closely analogous to the policy which the government has undertaken to carry out in its formation of operating regions. It lacked the freedom of interchange of facilities, especially terminal facilities, which is available under the government's regional plan, but in the main the Pennsylvania's plan for elimination of



The Allegheny Region

Pittsburgh & Lake Erie was a competitor with the Pennsylvania lines running to the lakes and also by way of the Lake Shore with the Buffalo, Rochester & Pittsburgh and again competed with the Pennsylvania on through business to the seaboard because of its being a part of the New York Central System.

Besides the competition within the region itself on through business, the region competed with the trunk lines of the eastern region. Thus on passenger business, the Pennsylvania and New York Central each had their fast trains to the west from New York; on passenger business

cut-throat competition in its territory is comparable to the present situation.

Competition was not eliminated, however, any more than there was lack of competition between different divisions of the same road. Under private operation it was possible to carry this co-operative spirit to the extent of avoiding ruinous competition only.

#### Allegheny Coal Region

With coal playing such a large part in furnishing railroad traffic, it is not surprising that very early in the railroad

history of this region each of the larger companies dominated a certain coal region, serving many of the mines in that region exclusively. The principal coal regions are the one about Scranton and Wilkes-Barre, the one about Sunbury, the one about Tyrone and the one in West Virginia, north, east and west of Elkins. In the Allegheny region, therefore, we have a system of railroads which includes four great coal regions from which coal is moved both east to the seaboard at New York, Philadelphia or Baltimore, and west to the Pittsburgh district and beyond, or north to the lake district and beyond. This system has two principal east and west trunk lines, the Pennsylvania Railroad and the Baltimore & Ohio, with the Western Maryland as a potential east and west trunk line serving Baltimore. These trunk lines are the heaviest traffic lines in the United States. The Pennsylvania main line consists of a four-track line from Pittsburgh to Philadelphia and from Philadelphia to New York with two additional low grade freight tracks from Harrisburg to Philadelphia and to New York. The Baltimore & Ohio is a four-track line with some exceptions as far as Cumberland and there separates into two two-track lines, one running to Pittsburgh and one directly west. The Pittsburgh & Lake Erie serves as a huge switching yard for traffic both north and west-bound from the Pittsburgh district and for fuel inside of that district. A more detailed study of the network of lines going to make up the Allegheny region would show that even under separate private management each of these lines play a very important part in the furnishing of adequate transportation to the entire region.

#### Traffic Density

Furthermore, nearly every important line included in this Allegheny region, even under normal conditions, was being operated fairly close to capacity. This, of course, was not true of the Western Maryland, nor of some lines of the other roads, but in general it was the characteristic of the entire region. A freight traffic density of 4,000,000 tons per year, per mile of single track, was not at all uncommon. The average freight traffic density on the entire Pennsylvania in 1917, including, of course, those lines that are double tracked or four-tracked, was 6,575,000. Besides this freight density, there was a very heavy passenger density. Between Pittsburgh and Philadelphia, the Pennsylvania had passenger schedules calling for more than 40 through trains each 24 hours, besides a large number of locals making parts of this run and numerous commutation trains into Pittsburgh, Harrisburg and Philadelphia.

Not only was the network of tracks in this region being worked to within 10 or 15 per cent of their capacity, but there were a great number of terminals which were being worked to a point above their most economical capacity even before 1916.

#### Problems of the Regional Director

The situation presented to the regional director of the Allegheny region was quite different from that which faced any other regional director. There were the general problems such as changing the point of view of railroad men from that of competition above everything else to viewing any road as the right one to ship traffic over if it served the purpose of furnishing transportation facilities. There have been probably hundreds of amusing incidents illustrating the difficulty of making this change in attitude of mind. Probably there have been numerous instances where officers have come privately to the regional director and complained against some order which took traffic from the regional director's own road and gave it to a former competitor's road. There is, of course, also the situation as regards equipment, which even after all restraints of separate ownership were removed was not as easily shifted from one road to another—we are speaking now especially of locomotives—as might

have been expected. Repair facilities, for instance, stores, adequate turntables, etc., were not equally available on all roads.

All of the regional directors have probably found it necessary to move with care in making any sudden shifts of traffic from the accustomed route to some other. On the other hand, in the Allegheny region as in other regions there had been some hauling of freight around Robin Hood's barn in order to get it away from a competitor and in the Allegheny region, especially, there has been an exclusive use of terminals which influenced the movement of a considerable amount of traffic. In the Allegheny region a special committee is now in charge of the matter of long hauling of freight and as conditions are studied more thoroughly this ought to be a condition that will be almost entirely remedied. The use of terminals may take a somewhat longer time and be a somewhat more delicate matter to handle but it is entirely feasible to work out a satisfactory solution of most of the problems connected with it.

In the Allegheny region, as in no other region, pressure of traffic is so great that a single tie-up, a single yard becoming congested, may spread congestion with startling swiftness. The whole mechanism of transportation is so complicated that a local disturbance may develop into a serious tie-up of traffic over a very considerable portion of the entire region. The fact that the region has three important Atlantic ports—New York, Philadelphia and Baltimore—places a responsibility on the regional director which is of the greatest moment.

#### Causes of the 1917 Freight Congestion

It was the almost universal opinion of the higher officers of the Pennsylvania that it was not the volume of traffic or the shortage of cars which caused the congestion on that system in 1917, but it was the sudden swirling into new channels of traffic broken by the cross currents and dams of government priority orders which threw the old stream of traffic into indescribable confusion. The Pennsylvania management was helpless under such a situation. The only conceivable relief could have come from the Railroad's War Board in Washington, but this board was faced with a situation which appeared to be about hopeless. These men were not the directors of priority and as a matter of fact no single man or small group of men could have known the real relative merits of the clamor for priority for a hundred and one articles which were all urgently needed in government work.

It will take initiative, quick decision and absolutely fearless determination on the part of the regional director of the Allegheny region if he is to prevent the overloading of some particular part of his complicated piece of transportation machinery; and, at the danger of needless repetition, it should be said again that quickness of action will be absolutely essential.

#### The Present Situation

It is not generally understood to what extent the turmoil of traffic, especially in the Allegheny region, has subsided. Today, all of the mines in this region are fully supplied with coal cars. The industrial situation is likewise fast straightening itself out. It must be remembered that in 1917 not only was the government trying to move troops—munitions and supplies for these troops—and to continue to move orders not completed for the Allies, but also to move all the great mass of materials and supplies necessary for the building of cantonments, the building of ships; in fact for the building of the tools for making the tools for making war as well as the tools of war. The worst of this confusion is now over. Ship yards are beginning to demand only the materials for making ships and not, in addition, the materials for building

ship yards and new industrial cities. The movement of troops into and out of cantonments continues, but the materials for the cantonments themselves no longer have to be afforded transportation facilities.

Another thing should be borne in mind: the government is restricting the output of many non-essential industrial plants. Take the manufacture of pleasure automobiles as an example. Even assuming that the government uses the full capacity of an automobile company's steel plants for the manufacture of steel products for use in the war, the fact that pleasure automobiles are not being manufactured will to a very considerable extent decrease the amount of general traffic connected with the automobile industry which the railroads will be called upon to handle. Materials for the engine and the finished engine are only a part of the traffic which the railroad handles in connection with the building of a pleasure car and its carriage to market. There is the leather, the wood, and accessories and there is also the car itself as a finished product which occupied an amount of railroad equipment, entirely disproportionate to that required to carry steel products for use in war, using an amount of shop capacity equivalent to a pleasure automobile.

A summary of the work of the railroads in the Allegheny region for the two-months' period ending June 30, 1918, were published in the *Railway Age* of August 16, 1918, page 299.

#### The Personal Equation

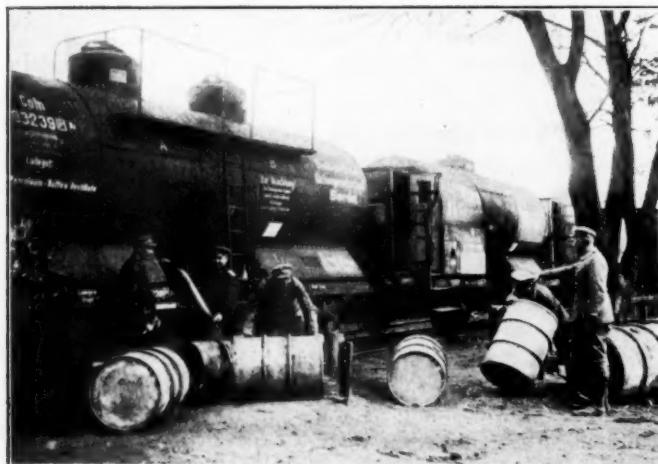
Not only has the regional director of the Allegheny region a tremendously complicated physical plant working under extraordinarily heavy pressure to keep running smoothly, but he also has a peculiarly complicated situation in regard to the organization and personnel of the roads under his jurisdiction. The Pennsylvania was one of the best organized railroads in some ways in the world. There was a spirit of loyalty on the part of its employees and officers which was an asset of so great a value as to be hardly measurable in dollars and cents. To build up such a spirit as this had been the work of a great number of years and of a steadfastly maintained policy of promoting from within the company's own ranks. Such a spirit as this could only be built up by a system approaching the military system. A man who was willing to work hard, had average ability and good character must be assured of a lifetime of steady work and slow but steady promotion if he is to be bound to and with his company as the Pennsylvania undertook to do.

The man of extraordinary ability must be assured of sufficiently great rewards for success within the organization to bind him to it.

To a less extent the Baltimore & Ohio had built up a similar spirit, the extent being less, not because the theory back of the Baltimore & Ohio organization was so different but because it had not been so steadfastly held to over such a long period of years.

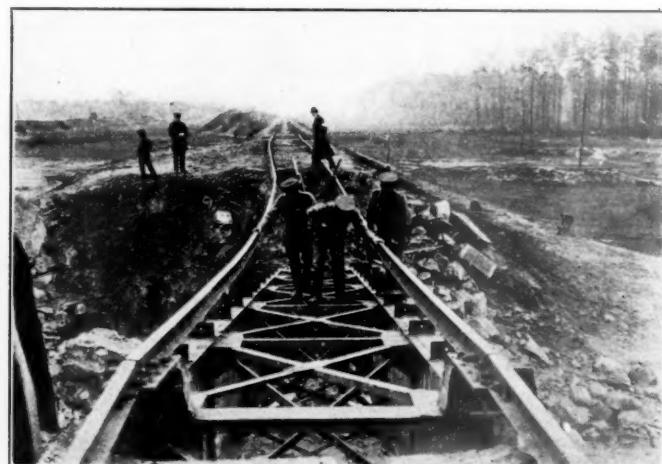
An indefinite amount of tact is necessary in handling a situation such as is here presented. Human nature being what it is it was a temptation for a Pennsylvania officer to have somewhat the attitude of having a chip on his shoulder, or even if he did not have this attitude in the slightest, human nature again being what it is, the officer of some other road might imagine that he had this attitude. The utmost spirit of co-operation is necessary successfully to wield the Allegheny region into one great operating unit, but in developing such co-operation the ever-present danger of developing an unconscious spirit of opposition is like the presence of a quantity of high explosives.

C. H. Markham, the regional director, was president of the Illinois Central from the time when J. W. Harrahan left it to 1917, when he was appointed by the director general as regional director of the Southern region with headquarters at New Orleans, La. When he took hold of the Illinois Central, the organization was in very bad shape. The scandal in regard to the Blue Island Car Repair Company had more or less honeycombed parts of the organization with distrust and suspicion and, furthermore, the personnel of the organization had never been won over to a unit of loyalty after Stuyvesant Fish left it. On the southern end of the road, moreover, the relations between the Illinois Central and the public served were not in many cases as good as they should have been. All of this and more—a serious strike—Mr. Markham faced and overcame. He left the Illinois Central a united loyal organization having to a marked degree the good will of the public it served. If he can come in contact with enough of the officers of this vast Allegheny region to permit of a general first hand impression being formed by a considerable and influential part of the personnel under his direction, of his directness and honest impartiality of outlook, he may be able to, even in a comparatively short time, escape the worst of the dangers that are breaking in such a situation as he is to handle. The magnitude of the task, however, should not be lost sight of.



Photos by Press Illustrating Service, Inc.

Roumanian Oil Arriving at the German Front



Germans Rebuilding a Railway in France

# Important Phases of the Fuel Conservation Problem\*

## Suggestions to Railway Men of All Departments Regarding the Economical Use of Coal

By H. C. Woodbridge

Supervisor, Fuel Conservation Section, United States Railroad Administration

SOME PEOPLE HAVE THOUGHT that many of our railroad men were not as patriotic as they should be, that they thought only of their grievances, real or imaginary, and of the wage increase. Who are these men? Are they not the fathers and brothers and uncles and cousins and friends of the great majority of the boys who are fighting and dying for us in France?

### Suggestions for Saving Fuel

The following suggestions for saving railroad fuel have been compiled in the hope that they will be considered by all railroad men regardless of the fact that they are addressed particularly to different classes of employees.

*To the Managers:*—Provide necessary facilities and supervision insofar as possible.

Show your interest by commendation or criticism at staff meetings and when you are on the road.

Purchase power from large public utilities plants if possible, and avoid the use of uneconomical small power stations on your lines.

Provide the best sand obtainable for locomotive use. Slipping engines destroy fires, machinery and track and do not move business.

This movement must get impetus as well as approval from you.

*To the Maintenance of Way Men:*—Your slow orders and slow flags are an aid and comfort to the enemy.

Pick up coal and when you pick it up, place it where it will not be wasted.

If possible, water tanks and sidings should be placed where tonnage trains can be started easily.

Conserve the use of coal in bunk houses and in your shops.

*To the Mine Operators:*—Mine clean coal to the limit of your capacity.

Co-operate with inspectors and avoid the use of cars for the transportation of substances other than coal, because a large percentage of impurities in the coal will to a great extent cripple transportation and manufacturing. Millions of car days and a million tons of coal were wasted last year transporting foreign substances in the coal.

Load cars to their proper limit and thus further conserve the car supply and increase the percentage of freight moved in each train.

*To the Superintendents, Train Despatchers, Yardmasters and Block Operators:*—Have orders ready to hand on and thus avoid stopping trains.

Start trains at times when they can be moved over the division with least delay.

Set "pegs" for the extras to make; if these standard times are not made, investigate and remove the cause for delay.

Check weigh the car loads of supply coal at frequent intervals.

Maintain proper tonnage per train. On a long, hard pull a speed of 15 m. p. h. should be maintained.

See that your passenger trainmen do not waste steam in heating trains.

Use locomotives equipped with superheaters whenever possible.

Keep only the necessary power under steam.

Remember about one quarter of the locomotive fuel is burned at terminals doing no useful work.

Exert your influence toward conservation of fuel in station buildings and cabooses during coal weather. Cabooses have been known to burn three tons of coal each per month and much of this heat, as you know, was thoroughly distributed over the right of way.

Have trainmen card cars for defects so as to assist inspection and repairs at terminals and so safeguard against the use of such cars beyond a repair point.

Some slowing up of train schedules has been made. Are your stationmen eating up the good which it was expected would be derived by not expediting their work?

Co-operate with engine terminal forces and avoid delay at coal chutes because loaded cars have not been placed and at ash pits because cars for loading are not available.

Remember when you switch a cut of cars in front of a train which is ready to move you are wasting from 4 to 40 lb. of coal per minute.

See that your trainmen realize the appalling losses in fuel, labor and material which follow defects caused by air hose damaged by being pulled apart instead of separated by hand.

Stop air leaks on the road when possible and consistent to do so.

Avoid damage and loss of lading to cars in hump yards and in general switching. In an Eastern hump yard recently there were 40 car loads of coal picked up in one week and the cost of repairs on cars damaged in that yard was found to have jumped from \$50 to \$1,000 per week.

Get out suitable bulletins. Publish progress reports. Give credit where credit is due.

Here is a paragraph from a paper on Fuel Economy that I read before this Club in January, 1916:

"There is another fuel upon the conservation or best use of which our progress and perhaps the very existence of our country may depend. I appeal to you to promote development which will insure against waste of this, the most valuable fuel that ever was or ever will be mined. I refer to the elements which burn in the mind and heart of the progressive man. There has been a tremendous and cruel waste of this fuel in the super-exhaustion enforced on many such men by self-satisfied and narrow men in authority, who have strangled incentive and initiative in their associates until cultures of "What's the use" germs have developed everywhere."

"The manager or superintendent who fails to make the most of the corrective and creative power in his subordinates and associates—and these include the specialists and all-around experts in the employ of those concerns which serve the railroad trade, has failed to take advantage of his greatest opportunities.

"If you encourage initiative in others and aid in the development of their thoughts, you will strike at the heart of the disease, which at times cripples our fuel as well as other economy efforts."

*To the Master Mechanics and Roundhouse Men:*—Find out how much coal you are using in banking and building fires and how much you can reduce this amount. Try bank-

\*Abstract of a paper read before the Railway Club of Pittsburgh.

ing the fires on the front of the grates only, using wet coal.

Avoid as much as possible the waste of coal which falls through grates when preparations are being made to fire up.

Stop unnecessary blower line losses and other leaks.

Cover steam pipes in roundhouses and shops and on your locomotives with suitable lagging.

Stop leaks in your stationary boiler settings and arches. Use dampers and have the flue gases analyzed.

Stop air leaks into smokeboxes.

Provide sufficient air opening in ashpan—at least 14 per cent of grate area.

Don't overload tenders, and keep the unused coal shoveled ahead. It spoils on the back of tank, injures the sheets and is just that much useless load to drag around.

Correct improper steam distribution. A lame engine in this country is the Kaiser's delight.

Report poor coal, giving enough information so that the mine at which it was loaded can be located and properly dealt with.

Determine the proper size and character of nozzle tip for various classes of engines, and keep a record of nozzle sizes; make frequent checks to correct errors in draft appliances. Don't monkey with nozzle tips; correct defects which cause steam failures.

Use scrap wood for fuel when practicable.

Record condition of fires in incoming engines and advise the road foreman or instructors when improper firing is evident so that the inexperienced man will be instructed as soon as possible.

If consistent don't clean fires on incoming engines which will go out soon. Clean these fires when engine is taken out. The ashes will help keep the pops down and at the same time protect the flues while engine stands at your terminal.

On the Chicago & Northwestern a test made last winter when the temperature was below freezing showed that an engine having its stack covered after the fire had been knocked out and the grates covered with green coal would stand from 8 p. m. Saturday until 2 a. m. Monday morning and have 20 lb. of steam on boiler at 2 a. m. Monday morning.

Repair steam heat regulators and piping before cold weather sets in.

Keep boilers clean of soot clinkers in flues and mud and scale inside. Mr. Foque of the Soo Line, stated that in a bad water district of that road \$163,000 in fuel alone was saved in one year by properly cleaning locomotive boilers.

*To the Engineers and Firemen:*—Recommend changes in schedules which if made will result in better operation and consequent decrease in fuel expense.

Make your time if consistent with good operation to do so, but don't "beat it" so much that the train and station men

have time to visit at stations or so that you will have long delays at junction or meeting points.

You have been supervised to the limit on use of oil. Remember two scoops of coal right here in the coal region are worth a pint of valve oil. If you really need oil to save coal or machinery, get it.

Remember that carefully conducted tests have shown that you can put into the firebox 23 per cent more coal than is needed and not get one bit of good from the extra amount; in fact, with superheater locomotives, excess coal results in lower superheat and a great reduction in the efficiency of your engine.

Avoid unnecessary loss through pop valves.

*To the Road Foremen of Engines:*—Do the work for which you are best fitted and delegate office work and the investigation of non-essentials, post-mortems, etc., to others.

Get a counter and compare the number of scoops of coal used by various crews in similar service between given points and let the men know the results.

Instruct new men.

Have your instructors spend some time with fire cleaners and builders as well as with the roadmen.

Supervise systematically the preparation of fires before starting, as well as fires in incoming engines.

You know the thousand things to do. Hit the most important things first and hardest. Do your full duty more thoroughly than ever before.

#### Conclusion

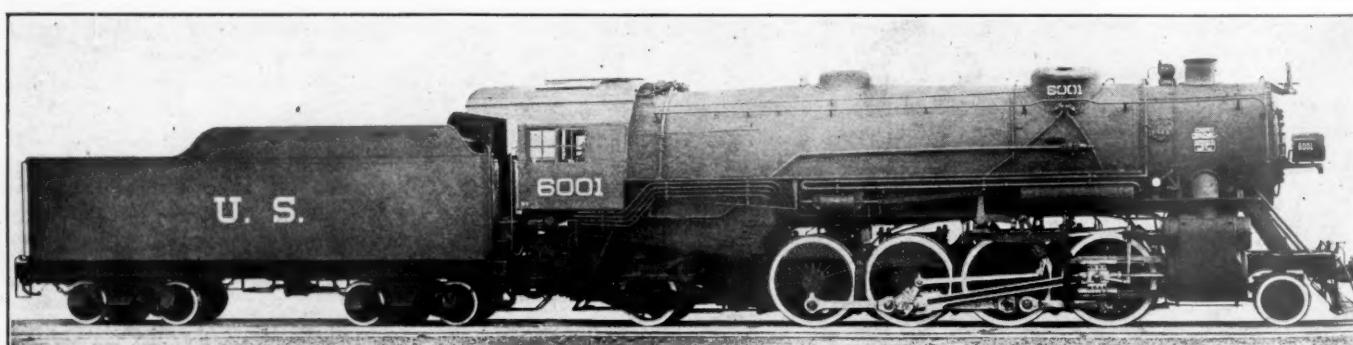
There are nearly 2,000,000 of our men in France and 2,000,000 more will be there soon. What are our 2,000,000 railroad men going to do? The labor problem is the world's problem today.

Many of the young men most needed in our mines have gone to war. Save coal and you conserve labor. The result is of vital interest to every man, woman and child in America, to say nothing of the rest of the world.

Let us hold staff meetings and conferences, but not mutual admiration socials. Let's clean up and carry on.

When you go out from this meeting let there be a prayer on your lips and a new determination in your heart.

**WOMEN IN SIGNAL BOXES.**—At a meeting in London of railwaymen representing over 30 branches of the National Union and close upon 10,000 men, a resolution was carried unanimously protesting "against the attempt now being made by the South-Eastern & Chatham Railway to employ women in signal boxes." The meeting considered that, apart from other grounds, women are unsuited to the work, either by temperament or constitution.



The First of the Railroad Administration Standard Heavy Mikado Type Locomotives to Be Completed; Built by the American Locomotive Company

# Doings of the United States Railroad Administration

## Director General McAdoo Expects to Take Prompt Action on the Long Delayed Compensation Contracts

WASHINGTON, D. C.

THE DIRECTOR GENERAL is expected very soon to announce his decision concerning the standard form of contract covering railroads taken over by the Railroad Administration. As noted in last week's issue, he held a meeting with counsel of the Railway Executives' Advisory Committee and the National Association of Owners of Railroad Securities, Wednesday, August 14. On Monday of this week and in accordance with the suggestion of the director general at the conference, Samuel Untermyer and B. H. Innes Brown, counsel for the Security Owners, filed a brief covering suggested changes. The director general now has this under advisement. At the meeting Wednesday Mr. McAdoo indicated his anxiety for a speedy determination of the question at issue and promised to give the subject his immediate attention on receiving the brief. He also stated that his only wish was to procure a contract that would be absolutely just alike to the security holders of the railroads and to the government.

One point that is receiving attention more recently is the fact that some of the railroads may not care to sign any contract at all, preferring to rest simply on their rights under the federal control act of last December. Those who sign the contract waive the right to bring action for damages that may be sustained during the period of federal operation. (See paragraph (a) of Section 3, relating to acceptance.) Many people are convinced that Mr. McAdoo will not modify the clause of the contract containing this waiver.

Progress is also being made on the contract covering the short lines relinquished by the government, a committee of the American Association of Short Line Railroads, consisting of Ben B. Cain, vice-president and general manager of the Gulf, Texas & Western, and W. M. Blount, president of the Birmingham & Southeastern, conducting the negotiations for the short lines.

### Inspection Trips Contemplated

The director general is going to become acquainted with the railroads under his jurisdiction first hand at the earliest opportunity. He has had a good opportunity to see the roads in the west through his recent two months' trip in that part of the country. He now contemplates going over the lines in the east similarly and will make inspection trips over some of the more important eastern systems beginning in the near future.

### The Warranty in Purchasing Contracts

The situation as to the warranty or covenant relative to contingent fees which has been put in contracts covering purchases by the railroads seems by way of being cleared up in a few days one way or another. The attorney general last week expressed his opinion in correspondence with the various departments of the government that if the clause (noted in last week's *Railway Age*, page 295) covering the contingent fee operator was used, it should be construed strictly, that is, as prohibiting all contingent fees on contracts covering sales to the government. Among those who received a letter of this kind was the Department of Law of the Railroad Administration, which has passed it along to the Central Advisory Purchasing Committee for action. At the time this is written the committee has not given the matter its full consideration and has not decided just what steps it will take. Apparently, the attorney general's findings may mean that all agents who are now working on a commission or on a salary and a commission basis will have to be put on a

salary basis only in so far as dealings with the Railroad Administration are concerned.

It is, of course, possible that some means of exception may be made and that something may be done along the line of the action taken by the War Department which is best explained by quoting the statement which the War Department authorized for publication Monday. The statement follows:

"The President has agreed with the secretary of war that the covenant to be inserted in all war supply contracts against the operation of contract brokers and other illegitimate business agents shall not be used in such a way as to be harmful to long established business customs or to curtail industry.

"In accordance with this agreement the General Staff has ruled that exceptions to the covenant will be allowed only in classes of cases first authorized by the Superior Board of Contract Review after finding that the best interests of the government require such exceptions.

"The first ruling of the board covers manufacturers of cotton, woolen and worsted, and silk textile industries. The board has decided that there shall be added to the covenant a clause which shall exempt the manufacturer who handles his products through a selling agency or agencies which have handled such products prior to and since April 1, 1917.

"Manufacturers and dealers who have the required supplies in stock may make contracts with the supply bureaus. Exceptions to this rule will be allowed only in classes of cases first authorized by the Board of Contract Review of the supply bureau affected after finding that the best interests of the government require such exceptions. The rulings of these boards are subject to the authority of the Superior Board."

The Railway Business Association, through its committee on Government Purchasing Policies, has sent the following circular to its members under the title of "All Contingent Fees Condemned," dated August 14:

"Contingent sales commissions on government contracts, including railroad contracts, whether paid to established agencies or to others, are intended by the attorney general to be abandoned through the warranty covenant recommended by him to be inserted in all government contracts. To the Railway Business Association, whose request for interpretation was made on July 25 and again on August 14, Assistant Attorney-General Huston Thompson writes as follows:

The attitude of this department is that the covenant is so comprehensive in its language that it does not permit of any exception in the matter of paying commissions to brokers for procuring government contracts.

"Pending efforts to convince the authorities that improper and excessive contingent fees can be eliminated while preserving legitimate sales agencies, some manufacturers of railway supplies are working out a salary basis or dealing with the agency as a jobber who buys stocks outright.

"Before determining the form of the warranty covenant the Department of Justice endeavored to frame language which would distinguish between legitimate agencies and others, but concluded that no such language could be found. The view seems to have prevailed that even established agencies, which in non-government dealings have won high repute, when seeking contracts with the government should not through a contingent-fee system put salesmen under temptation to engage in questionable exertions of influence. While the warranty does not rest upon statute, there are a number of Supreme Court decisions which condemn forms of contingent-fee business when the buyer is the government; and law or no law the government can decide what contracts

it will or will not enter into. The spirit in which our committee is discussing the subject is one of respectful request for opportunity to recommend modification if possible of a contract form which many of our members think will increase their selling cost and hence tend to raise rather than lower the prices which are quoted in bids."

Then follows Chairman Humphrey's letter to the attorney-general and to the director of finance and purchases, which was printed in the *Railway Age* of August 16, page 311.

#### Courtesy First

The Director General, with all the serious matters that are coming up for his attention, has found time to admonish the employees on the federally operated railroads that a "Public be damned" policy will under no circumstances be tolerated on the railroads under government control. Every employee of the railroad, he says, should take pride in serving the public courteously and efficiently and should cease absolutely from bringing up as an excuse on any occasion that "Uncle Sam is running the railroads now," or that, "These are McAdoo's orders." At the same time, he has taken the public into his confidence and has explained to them the reasons for complaints that have been made against war time passenger service and told them that everything possible is being done for their comfort and convenience, and further than that, he has declared in effect that traveling unnecessarily is unpatriotic. "Among the many patriotic duties of the American public at this time," he says, "is the duty to refrain from traveling unnecessarily."

The statement to the employees was dated Sunday and was followed by the statement to the public dated Tuesday. The employees are addressed in General Order No. 40 as follows:

"Complaints have reached me from time to time that employees are not treating the public with as much consideration and courtesy under government control of the railroads as under private control. I do not know how much courtesy was accorded the public under private control, and I have no basis, therefore, for accurate comparison. I hope, however, that the reports of courtesy under government administration of the railroads are incorrect, or that they are at least confined to a relatively few cases. Whatever may be the merits of these complaints, they draw attention to a question which is of the utmost importance in the management of the railroads.

"For many years it was popularly believed that 'the public be damned' policy was the policy of the railroads under private control. Such a policy is indefensible either under private control or government control. It would be particularly indefensible under public control when railroad employees are the direct servants of the public. 'The public be damned' policy will in no circumstances be tolerated on the railroads under government control. Every employee of the railroad should take pride in serving the public courteously and efficiently. Courtesy costs nothing and when it is dispensed, it makes friends of the public and adds to the self-respect of the employee.

"My attention has also been called to the fact that employees have sometimes offered as an excuse for their own shortcomings, or as a justification for delayed trains or other difficulties the statement that 'Uncle Sam is running the railroads now' or 'These are McAdoo's orders,' etc. Nothing could be more reprehensible than statements of this character, and nothing could be more hurtful to the success of the Railroad Administration or to the welfare of railroad employees themselves. No doubt, those who have made them have done so thoughtlessly in most instances, but the harm is just as great if a thing of this sort is done thoughtlessly as if it is done deliberately.

"There are many people who for partisan or selfish pur-

poses wish government operation of the railroads to be a failure. Every employee who is discourteous to the public or makes excuses or statements of the kind I have described, is helping these partisan or selfish interests to discredit government control of railroads.

"Recently the wages of railroad employees were largely increased, involving an addition to railroad operating expenses of more than \$475,000,000 per annum. In order to meet this increase, the public has been called upon to pay largely increased passenger and freight rates. The people have accepted this new burden cheerfully and patriotically. The least that every employee can do in return is to serve the public courteously, faithfully and efficiently.

"A great responsibility and duty rest upon the railroad employees of the United States. Upon their loyalty, efficiency and patriotism depends in large part America's success and the overthrow of the Kaiser and all that he represents. Let us not fail to measure up to our duty, and to the just demand of the public that railroad service shall not only be efficient, but that it shall always be courteously administered."

To make sure that the matter should come to the attention of every employee, the director general instructed that a sufficient number of copies of General Order No. 40 should be sent out to provide for individual distribution. He desired that the copies of the order should be made with the delivery of the next pay checks, that a copy of the order should be posted on all bulletin boards, published in all railroad magazines and periodicals and given the widest possible publicity.

#### Statement to the Public

The statement to the public, issued on Tuesday, August 20, was as follows:

"Complaints have reached me from time to time of over-crowded trains and unsatisfactory conditions prevailing in some sections of the country in passenger train service. I feel certain that there are grounds for some of these complaints, but I am sure the public will be interested to know that the reasons are twofold:

"First, the great number of troops now being handled over the various railroads between the homes and the cantonments, between the different cantonments and then to the seaboard, is making extraordinary demands upon the passenger car and sleeping car equipment of the country. This has caused a scarcity of day coaches and sleeping cars which it is impossible to remedy immediately.

"Secondly, the increased demands upon track and terminal facilities for the transportation of the tremendous amounts of coal, food supplies, raw materials, and other things required for military and naval operations, as well as for the support of the civil population of the country, force the largest possible curtailment of passenger train service. The movements of troops and war materials are, of course, of paramount importance and must be given at all times the right of way.

"It was hoped that the increase in passenger rates recently made would have the wholesome effect of reducing unnecessary passenger traffic throughout the country. The smaller the number of passengers who travel, the greater the number of locomotives and cars and the larger the amount of track and terminal facilities that will be freed for essential troop and war material movements. Engineers, firemen and other skilled laborers will also be released for service on troop and necessary freight trains.

"Among the many patriotic duties of the American public at this time is the duty to refrain from traveling unnecessarily. Every man, woman and child who can avoid using passenger trains at this time should do so. I earnestly hope that they will do so. Not only will they liberate essential

transportation facilities which are necessary for war purposes, but they will save money which they can invest in Liberty Bonds and thereby help themselves as well as their country; and the fewer who travel, the more ample the passenger train service will be.

"I may add that consistently with the paramount demands of the war, every possible effort is being made by the Railroad Administration to supply the largest possible amount of comfortable and prompt passenger train service."

### Fuel Conservation

The Fuel Conservation Section, in its campaign for fuel economy, has addressed itself to the mechanical department officers and to the men on the job through their division or lodge secretaries. On August 1 it issued five circulars, No. 8 to all motive power officials concerned with locomotive maintenance, No. 9 to the division secretaries of the Brotherhood of Locomotive Engineers, No. 10, to the lodge secretaries of the Brotherhood of Locomotive Firemen and Enginemen, No. 11 to the division secretaries of the Order of Railway Conductors, and No. 12 to the lodge secretaries of the Brotherhood of Railroad Trainmen.

Fuel Conservation Circular No. 8, addressed to motive power officers concerned with locomotive maintenance, draws attention to certain sources of fuel loss which can be remedied by proper locomotive maintenance, and reads as follows:

The inspection of locomotive front-ends on certain roads shows that there is a marked variation in the size of exhaust nozzles. In many instances exhaust nozzles have been decreased in size because of the presence of air leaks in the front-end, which of course partially destroys the vacuum and necessitates excess draft. Such leaks can be readily located when the engines are under steam or when they are located near an outside steam supply, by using the blower to create a draft and holding a lighted torch to all seams and joints.

In superheater locomotives with outside steam pipes, leaks are frequently found under the covering of the steam pipe where it goes through the sheet. When so located, the leak does not show a burn spot.

Any front-end leakage obviously increases the amount of gas and air which must be moved by the exhaust jet, and consequently necessitates a reduction in the size of the nozzle tip. This of course increases the cylinder back pressure and entails fuel losses; and in addition frequently leads to partial engine failures and to an increased cost of front-end maintenance.

Every motive power official and employee who is responsible for the maintenance of locomotives should see to it that front-ends on locomotives are tested for air leaks at frequent intervals.

Circulars Nos. 9 and 10, addressed to the men in engine service, are practically the same, and read as follows:

Our government today is spending not millions, but billions of dollars for labor and supplies, for arms and ammunition, and for ships to move men and material.

We are in this war to win. We shall have to pay for winning, as we always pay for anything worth while. This is not the President's job; it is not Secretary Baker's job, nor Secretary Daniels' job, nor Director General McAdoo's job. It is our job.

With this point settled and everybody agreed, what remains for you and me to do? The answer is to work and to save. Why? Because nothing but labor and material will do the business. Money will not do it. It cannot be worn nor used for food; like the steam gage on the boiler, it is something to show pressure—but the steam gage never pulled a car. Human labor, human intelligence, and what they create, are the vital things. Food and clothing, rifles and machine guns, shells and ships, all spring from these.

*We shall win the war by the material we produce and by the way we use it.* We must get the most out of it, whether it be fuel, munitions or food. In the case of railroad fuel, we must make every ton move its maximum of men and material. You all know the ways in which this can be accomplished. This section is getting out a little handbook, containing suggestions of how to save railroad fuel. It will reach you within a few days. There is nothing new-fangled about it. You have all heard for years the suggestions it contains; but if every man would observe these suggestions in his daily work, we should save an enormous amount of coal.

We urge you to make a showing, but you must have the opportunity. Here it is—and as fine a chance as any man could wish for. This is the railroad bill for bituminous coal before and since the war:

| Year                             | Period | Tons        | Cost per ton | Value at mines |
|----------------------------------|--------|-------------|--------------|----------------|
| 1915—Before the war.....         |        | 122,000,000 | \$1.13       | \$137,860,000  |
| 1917—First year of the war.....  |        | 155,000,000 | 2.13         | 330,150,000    |
| 1918—Second year of the war..... |        | 166,000,000 | 2.50         | 415,000,000    |

These are the costs of the coal at the mines. During 1918 it will cost a dollar more per ton for company haul and handling; and for the 48,000,000 barrels of fuel oil which the railroads will use this year, they will pay \$69,000,000. This will make the railroad fuel bill for this year \$650,000,000, excluding the cost of anthracite.

Here are reasonable estimates of the savings which will result from even a moderate amount of extra effort and attention.

|                                   |             |
|-----------------------------------|-------------|
| 1 per cent saving represents..... | \$6,500,000 |
| 2 per cent saving represents..... | 13,000,000  |
| 4 per cent saving represents..... | 26,000,000  |

We present these facts to you in terms of dollars because the size of the job is most readily understood in such terms. Remember, however, that it is not dollars we are interested in, but coal. Coal sells for a fixed price per ton, but nobody can say today how much it is really worth. Coal enough in the next twelve months may well make the difference between winning or losing the war.

A coal shortage looms up ahead. It is estimated at about 75,000,000 tons. The shortage last year was 60,000,000 tons. There are only three ways in which to make this good.

First—By providing cleaner coal.

Second—By shutting off the so-called non-essential industries.

Third—By conserving by every possible means the coal which we must use.

The coal miners are going to do their share by giving us cleaner coal. They have been appealed to, and they are responding.

Scores of so-called non-essential industries have already curtailed their output; to go further in this direction will mean unemployment and disaster for your friends and neighbors. There is not much more to be had along this route.

The shortage must be made good chiefly by *care in the use of fuel*. The railroads use nearly one-third of all fuel produced in the country, and a large share of the responsibility consequently rests on us. The railroad Administration has given and will continue to give special attention to the improvement of the condition of power. The rest is up to us.

The miner will save his 2 per cent by giving us cleaner coal. The improved condition of power will contribute as much more. We railroad men who use the coal should contribute our 2 per cent. We may well do much more. Let us all pull together for a saving of 10,000,000, or perhaps 20,000,000 tons. We can make it if everyone puts his shoulder to the wheel.

If we win in this attempt, we shall have contributed to the successful outcome of the war; we shall have safeguarded ourselves, and our friends and neighbors from discomfort and unemployment; and we shall have added to our own skill and increased our own satisfaction and self-respect. *We shall have lined up solidly behind the first line "over there."*

Similarly, circulars Nos. 11 and 12, addressed to the men in train service, are alike and read as follows:

The United States railroads in 1918 will consume about 166,000,000 tons of bituminous coal alone. *Railroad fuel, including oil, when delivered at the furnace door or on the locomotive tender, will cost about \$650,000,000.* During 1915 the corresponding cost of railroad fuel was \$240,000,000—only a little more than one-third of the current cost. If the conservation of railroad fuel was important immediately before the war, how much more important is it today even when measured merely in terms of dollars.

This section was organized to conserve railroad fuel. By means of meetings throughout the country, through circulars, and through the operations of our supervisors, we are now urging motive power men, shopmen and roundhousemen, engineers and firemen, and transportation department officials to do everything in their power to save coal.

The coal miners and coal operators are also receiving their share of attention from both the Railroad Administration and the Fuel Administration. They are responding and there is already an improvement in the quality of coal mined which will effect savings of from \$12,000,000 to \$15,000,000.

It has not been generally realized that in many directions trainmen can do as much as enginemen. They have hitherto been frequently overlooked in our campaigns for fuel economy. We wish to bring to your attention some of the things which you all can do for Uncle Sam, for the United States railroads, and for the crew on the first section "over there."

(a) Try to keep your train moving. Anticipate and prepare for station work if you are in freight service. Encourage the quicker handling of passengers, mail and express, if you are in passenger service. The effort required to make up delays takes fuel.

(b) Leaky train lines waste fuel. Keep them tight. Leaks can usually be found in the cross-over connection joints or in the air hose gaskets.

(c) Leaky steam-hose connections in passenger service and drip cocks too wide open waste fuel. Overheated coaches and sleeping cars also cause waste. Do whatever you can to check such loss.

(d) Frequent inspections of car trucks and prompt attention to hot journals will avoid unnecessary friction and train delays. Journal friction means coal; hot boxes are frequently too long neglected, resulting in extra and unnecessary stops. If you are operating on single track, bear in mind that when you make an unnecessary stop you not only give rise to fuel loss on your own train, but on many other trains on the line.

(e) Watch the brake shoes on your train; dragging shoes, whether due to stuck brakes or to train line leaks, result in serious fuel loss.

(f) Do not fail to get down early enough to go out on time. The influence of a good start frequently runs throughout the day.

These are a very few of the ways in which conductors and trainmen can do their share in saving fuel.

The shortage of fuel last year amounted to 60,000,000 tons. None of us will forget what that meant. *The shortage this year is estimated at 75,000,000 tons.* Whatever can be done to offset this shortage by improving the quality of coal and by cutting off the supply to the so-called non-essential industries has already been done. Many such industries have already curtailed their output to the point where further decrease threatens unemployment and hardship for your friends and neighbors. *There is no way left but to make the most economical use of all fuel. We must save.*

When you buy a liberty bond you have only loaned the government a sum which Uncle Sam will repay you with interest. If, however, you save a ton of coal you give your Uncle something worth while; it costs you nothing but a little thought and a little extra effort, and he does not have to levy taxes to pay you back. Remember that every ton you save will be put to some very useful purpose. If it does not make munitions

or transport men and food, it can go to some "non-essential" industry and help to keep your friends employed.

*Let us constantly remember that we are in this world's war. Everyone of us wishes to do his share. It will help us and spur us on if we consider that France, little Belgium, sunny Italy, Great Britain with her far-flung line, Canada, Australia, New Zealand, India and Africa, for four years have been paying the supreme price. They have fought and died for the privileges we had and neglected. While they and our own boys are fighting and dying can we not do our share by working and saving?*

### Tank Car Mileage Doubled

The advantages of consolidation of control of the tank car lines in the hands of the United States Railroad Administration has been shown by a doubling in the tank car mileage between January and June this year. In the Mid-Continental oil field the tank car situation is in such good shape that there is almost a surplus of cars, and empty cars are on hand

Company cars increased their daily car mileage from 28.4 in January to 33.4 in April. The cars of the Texas Company similarly increased their daily mileage from 28.7 at the beginning of the year to 50 in May. Some companies are even reporting as high as 59 miles per car per day and one company has even reached 98.

### Only \$244,000,000 Spent for Additions and Betterments

The Class I roads (those having gross earnings over \$1,000,000 yearly), spent up to June 30, this year, only \$244,401,179 for additions and betterments, nearly all of which is chargeable to capital account. This amount represents only about one-quarter of the total expenditures specifically authorized.

### AUTHORIZATIONS AND EXPENDITURES FOR ALL CLASS ROADS IN CONNECTION WITH WORK CHARGEABLE TO CAPITAL ACCOUNT AS OF AUGUST 15, 1918.

| CLASS OF WORK<br>(1)   | Work specifically authorized on D. C. E. Forms<br>1, 2, 3 and 4, to Aug.<br>15, 1918, chargeable to |                    |                               |                              |                           | Expenditures from January<br>1, 1918, to June 30, 1918,<br>charged to |                           | Unexpended balance,<br>chargeable to |                           |
|--|---|--------------------|-------------------------------|------------------------------|---------------------------|---|---------------------------|--------------------------------------|---------------------------|
|  | Additions and<br>Betterments<br>(Excluding<br>Equipment)  | 1918 budget<br>(2) | Additions<br>to budget<br>(3) | Operating<br>expenses<br>(4) | Capital<br>account<br>(5) | Operating<br>expenses<br>(6)  | Capital<br>account<br>(7) | Operating<br>expenses<br>(8)         | Capital<br>account<br>(9) |
| 1. Widening Cuts and Fills, Filling<br>Trestles, etc.....  | \$5,097,989   | \$431,723          | \$2,336,675                   | \$6,179,333                  | \$540,294                 | \$1,920,198   | \$1,796,381               | \$4,259,135                          |                           |
| 2. Ballasting.....   | 9,379,271   | 48,176             | 3,716,746                     | 11,276,956                   | 737,611                   | 1,400,230   | 2,979,134                 | 9,876,726                            |                           |
| 3. Rails and Other Track Material.....   | 31,365,483  | 174                | 41,513,660                    | 28,510,674                   | 5,276,532                 | 7,041,450   | 36,237,128                | 20,969,224                           |                           |
| 4. Bridges, Trestles, and Culverts.....  | 36,185,921  | 701,597            | 20,341,497                    | 32,156,700                   | 230,159                   | 1,239,164   | 1,071,880                 | 13,040,723                           |                           |
| 5. Tunnel and Subway Improvements.....   | 2,185,242   | 47,071             | 732,973                       | 2,434,235                    | 176,036                   | 426,003   | 556,937                   | 2,008,232                            |                           |
| 6. Track Elevations or Depressions.....  | 4,112,556   | .....              | 1,302,039                     | 14,279,887                   | 230,159                   | 1,239,164   | 1,071,880                 | 13,040,723                           |                           |
| 7. Elimination of Grade Crossings.....   | 7,438,957   | 195,295            | 1,090,337                     | 11,116,791                   | 211,406                   | 1,735,112   | 878,931                   | 9,381,679                            |                           |
| 8. Grade Crossings and Crossing<br>Signals.....  | 631,082   | 14,918             | 156,483                       | 1,214,017                    | 56,295                    | 533,532   | 100,188                   | 680,485                              |                           |
| 9. Additional Main Tracks.....   | 44,574,583  | 1,085,427          | 6,760,655                     | 46,522,416                   | 872,545                   | 13,263,897  | 5,888,110                 | 33,258,519                           |                           |
| 10. Additional Yard Tracks, Sidings<br>and Industry Tracks.....                                  | 97,199,114  | 5,246,654          | 7,870,475                     | 94,584,606                   | 1,312,851                 | 21,810,800  | 6,557,624                 | 72,773,806                           |                           |
| 11. Changes of Grade or Alignment.....   | 6,359,027   | 117,544            | 2,544,511                     | 7,917,518                    | 408,078                   | 1,552,525   | 2,136,433                 | 6,354,993                            |                           |
| 12. Signals and Interlocking Plants.....   | 10,962,462  | 156,557            | 2,186,544                     | 11,056,819                   | 390,463                   | 3,091,068   | 1,796,081                 | 7,965,751                            |                           |
| 13. Telegraph and Telephone Lines.....   | 5,129,149   | 213,147            | 630,655                       | 4,564,792                    | 272,459                   | 1,297,446   | 358,196                   | 3,267,346                            |                           |
| 14. Roadway Machinery and Tools.....   | 955,857   | 36,716             | 18,235                        | 1,304,891                    | 8,028                     | 637,707   | 10,208                    | 667,184                              |                           |
| 15. Section Houses and Other Roadway<br>Buildings.....   | 1,306,847   | 57,304             | 162,762                       | 2,075,506                    | 50,711                    | 1,346,635   | 112,071                   | 728,871                              |                           |
| 16. Fences and Snowsheds.....  | 817,655   | 20,573             | 331,732                       | 1,415,356                    | 48,251                    | 500,380   | 283,481                   | 914,976                              |                           |
| 17. Freight and Passenger Stations,<br>Office Buildings.....                                     | 20,138,359  | 867,198            | 2,986,574                     | 26,239,012                   | 620,298                   | 9,439,200   | 2,366,276                 | 16,799,812                           |                           |
| 18. Hotels and Restaurants.....  | 199,282   | 61,142             | 15,665                        | 547,203                      | 2,391                     | 165,397   | 13,474                    | 381,806                              |                           |
| 19. Fuel Stations and Appurtenances.....   | 6,090,558   | 325,297            | 886,102                       | 5,737,817                    | 210,137                   | 1,742,682   | 675,965                   | 3,995,135                            |                           |
| 20. Water Stations and Appurtenances,<br>Shop Buildings, Engine-houses and<br>Appurtenances..... | 13,430,047  | 191,515            | 1,481,064                     | 7,722,733                    | 333,868                   | 2,644,634   | 1,147,196                 | 5,078,099                            |                           |
| 21. Shop Machinery and Tools.....  | 62,694,927  | 1,256,721          | 4,530,524                     | 27,701,891                   | 925,575                   | 7,684,813   | 3,604,949                 | 30,047,078                           |                           |
| 22. Shop Machinery and Tools.....  | 9,142,488   | 651,741            | 1,096,111                     | 13,933,243                   | 220,940                   | 3,761,981   | 875,171                   | 10,171,262                           |                           |
| 23. Elec. Power Plants, Substations, etc.....  | 10,781,347  | 890,889            | 1,889,968                     | 18,637,395                   | 154,658                   | 2,964,919   | 1,735,310                 | 15,672,476                           |                           |
| 24. Wharves and Docks.....   | 3,286,167   | 75,233             | 871,288                       | 2,326,930                    | 211,091                   | 387,887   | 660,197                   | 1,939,043                            |                           |
| 25. Coal and Ore Wharves.....  | 7,024,937   | 103,401            | 657,187                       | 5,195,544                    | 270,332                   | 1,777,890   | 386,855                   | 3,417,664                            |                           |
| 26. Grain Elevators and Storage Ware-<br>houses.....   | 2,914,202   | 62,095             | 413,250                       | 2,349,565                    | 64,147                    | 1,430,640   | 340,103                   | 909,925                              |                           |
| 27. Real Estate.....   | 3,309,141   | .....              | 21,440                        | 460,212                      | 1,545                     | 355,443   | 19,895                    | 104,769                              |                           |
| 28. Assessments for Public Improve-<br>ments.....  | 1,179,306   | 119,451            | 78,722                        | 1,632,530                    | 35,075                    | 873,448   | 43,647                    | 759,082                              |                           |
| 34. All Other Improvements.....  | 27,889,552  | 9,000              | 210,992                       | 6,165,499                    | 116,226                   | 1,814,892   | 94,766                    | 4,350,607                            |                           |
| Total (excluding equipment)....  | 433,751,488   | 12,986,561         | 106,835,086                   | 404,760,071                  | 18,429,765                | 102,172,314   | 88,405,321                | 302,587,757                          |                           |
| <b>EQUIPMENT</b>   |   |                    |                               |                              |                           |   |                           |                                      |                           |
| 35. Locomotives, Steam.....  | 196,926,868   | .....              | .....                         | 108,167,345                  | .....                     | 32,174,163  | .....                     | 75,993,180                           |                           |
| Locomotives Ordered by Railroad<br>Administration.....   | .....   | .....              | .....                         | 76,404,323                   | .....                     | 6,000,000   | .....                     | 70,404,533                           |                           |
| 36. Locomotives, Other.....  | .....   | .....              | .....                         | 2,354,925                    | .....                     | 82,861  | .....                     | 2,272,064                            |                           |
| 37. Freight-train Cars.....  | 212,856,464   | 496,066            | .....                         | 121,203,743                  | .....                     | 52,951,152  | .....                     | 68,252,591                           |                           |
| Freight-train Cars Ordered by Rail-<br>road Administration.....                                  | .....   | .....              | .....                         | 289,450,000                  | .....                     | .....   | .....                     | 289,450,000                          |                           |
| 38. Passenger-train Cars.....  | 28,459,830  | .....              | .....                         | 14,692,415                   | .....                     | 6,607,537   | .....                     | 8,084,878                            |                           |
| 39. Work Equipment.....  | 12,927,109  | 246,042            | .....                         | 5,072,853                    | .....                     | 1,075,610   | .....                     | 3,997,243                            |                           |
| 40. Motor Cars and Trailers.....   | .....   | 20,200             | .....                         | 587,298                      | .....                     | 24,091  | .....                     | 563,207                              |                           |
| 41. Floating Equipment.....  | .....   | 75,000             | .....                         | 1,890,082                    | .....                     | 343,263   | .....                     | 1,546,819                            |                           |
| 42. Miscellaneous equipment.....   | .....   | 7,480              | .....                         | 655,509                      | .....                     | 212,194   | .....                     | 443,315                              |                           |
| 43. Improvements to Existing Equip.....  | 35,807,654  | 546,726            | 18,793,574                    | 35,208,060                   | 4,056,688                 | 11,758,505  | 14,736,886                | 23,449,555                           |                           |
| Total equipment.....   | 486,979,925   | 1,394,514          | 18,793,574                    | 655,686,551                  | 4,056,688                 | 111,229,376   | 14,736,886                | 544,457,175                          |                           |
| 44. Construction of Extensions,<br>Branches, and Other Lines.....                                | 20,330,489  | 230,894            | 24,136                        | 36,951,956                   | .....                     | 8,513,036   | 24,136                    | 28,438,020                           |                           |
| Total all work.....  | 941,041,002   | 14,668,969         | 125,652,796                   | 1,097,398,578                | 22,486,453                | 221,914,726   | 103,166,343               | 875,483,852                          |                           |

at shipping points to take care of any demand for 48 hours ahead. There are on order with the car builders at the present time about 15,000 tank cars having a total value of between \$4,000,000 and \$5,000,000. The tank car situation is now so improved that it is very likely that a considerable portion of these cars will not be needed, thereby effecting a considerable saving in expense as well as in material which is otherwise needed for war purposes. The increase in mileage as between January and June is shown by the figures of a number of typical important tank car lines. Cars of the Union Tank Line in January averaged 23.4 miles per day. In June this figure had reached 37.5. The Gulf Refining

The table is a consolidated statement for all Class I roads showing all expenditures for capital account approved by the director of the division of capital expenditures to August 15, 1918, and all expenditures actually made upon such work to June 30. It shows also the expenditures chargeable to operating expenses in connection with such work, and includes equipment as well as additions, betterments and extensions.

Additions and betterments (excluding equipment) actually authorized to August 15 call for \$106,835,086 chargeable to operating expenses and \$404,760,070 chargeable to capital account. Of these amounts \$18,429,765 chargeable to

operating expenses and \$102,172,314 chargeable to capital account, or practically 25 per cent, had been spent to June 30.

Equipment actually authorized to August 15 calls for \$18,793,574 chargeable to operating expenses and \$655,686,551 chargeable to capital account. Of these amounts \$4,056,688 chargeable to operating expenses and \$111,229,376 chargeable to capital account had been spent to June 30.

The budget estimates of the same companies submitted in response to the director general's request some months ago, called for a total for additions, betterments, equipment and extensions chargeable to capital account of \$941,041,902, whereas the work actually authorized and the equipment actually ordered up to August 15 aggregate \$1,097,398,578. The budgets called for only \$212,858,464 for freight cars, of which \$121,203,743 were ordered by the companies while the government itself has ordered for the companies \$289,450,000, making the total for freight cars for 1918 delivery \$410,653,743, as against \$212,858,464 asked for by the companies on their budgets, or an increase over the budgets of \$197,795,279.

#### Progress on Standard Cars and Locomotives

The car builders working on the Railroad Administration's orders for standard cars have been authorized by the Central Advisory Purchasing Committee to purchase the paint (excepting wood preservatives) for these cars. Maximum prices covering six varieties of paint based on actual proposals submitted by representative paint manufacturers, have been fixed by the committee as follows:

Reinforced Red Lead Semi-paste Paint, (Spec. R-810), \$2.40 per gallon, f. o. b. factory.  
Dark Red Oxide Semi-paste Paint (Spec. R-812), \$1.40 per gallon, f. o. b. factory.  
Black Semi-paste Paint (Spec. R-811), \$1.65 per gallon, f. o. b. factory.  
Stencil Black Paste Paint, \$0.10 $\frac{1}{2}$  per pound, f. o. b. factory.  
Stencil White Paste Paint, \$0.11 $\frac{1}{2}$  per pound, f. o. b. factory.  
Thinning Mixture (Spec. R-822-A), \$0.83 per gallon, f. o. b. factory.

A list of the paint manufacturers agreeing to furnish paint at these prices may be had on application to the committee.

The builders, however, are expected to purchase the paint at a price lower than the maximum figures named, if they can, taking into consideration sureness of supply, shortest haul and least congested routes. They are also advised that by spreading deliveries over an extended period they may also be able to obtain lower prices. Copies of all orders must be sent to the Inspection and Test Section and to the Procurement Section.

The above instructions to the carbuilders are of particular interest because they indicate in great measure the policy that is being followed out by the Procurement Section to allow the carbuilders to use their own organizations and established practices in the matter of purchasing and procuring material, thereby securing the advantages of the familiarity which these departments have with the purchasing of supplies.

Progress on the standard cars is considered favorable. The first completed standard cars are expected to be delivered the first week in September and to continue regularly after that. It is not expected that the order for cars recently placed for the American forces overseas will hinder the production of the cars for the Railroad Administration.

The standard locomotives were coming along until recently in even better shape than the cars. The Central Advisory Purchasing Committee and the Procurement Section, acting on the idea that motive power was even more necessary than new rolling stock, have been leaving nothing undone to secure material and to push construction as much as possible. The locomotive capacity of the country, however, is so far behind the great demands that have been made upon it that, as has been previously noted in the *Railway Age*, the priority necessarily accorded the 510 locomotives for the forces overseas will delay production of the standard locomotives. The American Locomotive Company recently finished its first standard locomotive on its orders for the Railroad Administration, a heavy Mikado built at the Dunkirk plant.

#### Southern Director Also Emphasizes Necessity for Courtesy

The Southern Regional Director has also taken up this matter of courtesy to the traveling public. In Circular No. 369 he says:

"In connection with our campaign to win public favor, I ran across something in the Manufacturers' News, written by Homer J. Buckley, which interested me and which I think enough of to ask you to give attention, and to bring to the attention of all of your miner officials who have occasion to correspond with the public. Mr. Buckley says, 'If you want to get a shock send for the files of your Claim and Adjustment Department and read over the carbon copies of the correspondence of that day and see how your customers are being treated. If you do not find a need for better letters, the kind that will hold the customer, then your house is an exception.'

"The same methods that ought to be adopted to hold the business of a commercial house are wise methods for us to follow to secure the confidence of railroad patrons, whom we are particularly anxious to please under this Federal administration. Carelessly written letters, either dictated by a superior or a subordinate officer, can materially hurt the cause to which we are giving so much attention.

"Let us all take stock in this matter now, and at intervals in the future."

#### Coal Loading Decreases

The weekly report on coal loading made by the Car Service Section to the director general last Saturday shows 260,572 cars loaded in the week ending August 10. This is considerably in excess of the amount for the same week last year, but a decrease from the 269,173 cars reported for the week ending August 3, this year. A summary of the report follows:

|                                 | 1918    | 1917    |
|---------------------------------|---------|---------|
| Total cars, bituminous.....     | 224,572 | 193,144 |
| Total cars, anthracite.....     | 40,942  | 43,050  |
| Total cars, lignite.....        | 3,657   | 2,813   |
| Grand total cars, all coal..... | 269,173 | 239,007 |

A summary of the decreases and increases in coal loaded since January 1, 1918, up to and including the fourth week of July, 1918, as compared with the same periods of 1917 follows:

| Month of                      | Increase     |
|-------------------------------|--------------|
| January.....                  | *79,172 cars |
| February .....                | 31,250 cars  |
| March .....                   | 46,613 cars  |
| April .....                   | 73,408 cars  |
| May .....                     | 84,998 cars  |
| June .....                    | 88,840 cars  |
| First four weeks of July..... | 113,188 cars |

\* Decrease.  
Increase—1918 over 1917—359,125 cars.

#### Tourist Cars in Empty Troop Trains

The Troop Movement Section has sent out instructions that care should be taken not to make up returning empty tourist cars in trains too long to permit of speedy and safe operation. In the memorandum which he has sent to regional directors, the manager of the section says: "In the movement of empty Pullman tourist cars for service, it becomes necessary when sending them to a divisional camp, for a large movement, to send the cars in large numbers."

"It has been noticed that a number of the roads are inclined to make up trains consisting of 20 or more cars, which results in slow movement, due to the size of the train, and, in some cases, unusual breakage of drawheads."

"As it is necessary, in order to get the best use of available cars, to handle them as rapidly as possible, it is suggested that instructions be issued to the roads to confine the size of the trains to a maximum of 15 cars, which experience has proved is about as heavy as can be handled without undue accident, due to broken couplers, etc."

### Federal Treasurers and Separate Bank Accounts

General Order No. 37 of July 19, (noted in the *Railway Age* of July 26, page 170) has been revised by General Order No. 37-A, issued August 1, to provide for additional payments to be made by the recently appointed federal treasurers. The additions are given in paragraph 4, which reads as follows, the additions being marked by italics:

- (4) Federal treasurers shall draw on the new accounts thus to be opened and subject to their check only for
  - (a) The payment of materials and supplies purchased since December 31, 1917; and also of materials and supplies purchased prior to December 31, 1917;
  - (b) The payment of operating expenses (including approved claims for personal injuries and loss and damage), and also equipment and joint facility rents, traffic balances, overcharges and taxes (other than the war income tax and the excess profits tax) accrued since December 31, 1917; and also all items clearly applicable to the period prior to January 1, 1918, commonly called "flap-overs," which are required to be set up on the federal books pursuant to Order No. 17.
  - (c) The payment of such addition and betterment costs as may be approved by the federal manager (or general manager appointed in lieu of the federal manager).

The order has also been changed so as to provide that the specimen check mentioned in paragraph 5 of the order should read "United States Railroad Administration, W. G. McAdoo, Director General of Railroads," instead of "United States Railroad Administration, W. G. McAdoo, Director General."

### 44,000 More Cars of Grain Loaded

The number of cars of grain handled in the five weeks ending August 3, as shown by the following table given out by the director general, August 15, totaled 131,942, as compared with 87,993 in the same five weeks of last year. The biggest increase is shown in the Central Western District, which handled in the period in question almost twice as many cars this year as it did last.

| Week ending— | District |        |           |       |            |      |          |       |
|--------------|----------|--------|-----------|-------|------------|------|----------|-------|
|              | Eastern  |        | Allegheny |       | Pocahontas |      | Southern |       |
|              | 1917     | 1918   | 1917      | 1918  | 1917       | 1918 | 1917     | 1918  |
| July 6.....  | 3,311    | 2,869  | 234       | 202   | 16         | 24   | 1,395    | 1,313 |
| July 13..... | 4,717    | 3,547  | 353       | 273   | 24         | 99   | 569      | 960   |
| July 20..... | 3,605    | 5,547  | 293       | 440   | 38         | 141  | 566      | 1,191 |
| July 27..... | 3,320    | 6,289  | 358       | 518   | 56         | 125  | 588      | 1,212 |
| Aug. 3.....  | 4,117    | 8,538  | 560       | 900   | 97         | 168  | 416      | 666   |
| Total.....   | 19,070   | 26,790 | 1,798     | 2,333 | 231        | 557  | 3,534    | 5,342 |

| Week ending— | District  |        |             |        |           |        |        |         |
|--------------|-----------|--------|-------------|--------|-----------|--------|--------|---------|
|              | Northwest |        | Cent. West. |        | Southwest |        | Total  |         |
|              | 1917      | 1918   | 1917        | 1918   | 1917      | 1918   | 1917   | 1918    |
| July 6.....  | 3,880     | 2,432  | 4,466       | 4,255  | 1,360     | 2,744  | 14,662 | 13,839  |
| July 13..... | 4,743     | 3,210  | 5,085       | 7,700  | 3,088     | 5,950  | 18,579 | 21,739  |
| July 20..... | 4,022     | 3,839  | 5,169       | 10,632 | 3,422     | 6,677  | 17,115 | 28,467  |
| July 27..... | 4,210     | 3,777  | 5,895       | 13,195 | 3,800     | 7,147  | 18,227 | 32,263  |
| Aug. 3.....  | 3,292     | 4,716  | 7,383       | 14,097 | 3,545     | 6,549  | 19,410 | 35,634  |
| Total.....   | 20,147    | 17,974 | 27,998      | 49,879 | 15,215    | 29,067 | 87,993 | 131,942 |

### Standard Passenger Train Cars

The Committee on Standards for Locomotives and Cars, of which Frank McManamy is chairman, held a meeting Tuesday to go over specifications for standard baggage and express cars and coaches. It also examined plans covering these types of cars recently prepared by the builders and presented through the committee of the builders, of which J. M. Hansen of the Standard Steel Car Company is chairman. The specifications and drawings should be ready in a short time, after which negotiations will be begun for their purchase.

The baggage and express cars are the more urgently needed, not alone because of the demands upon this type of car for use in express service and on troop trains, but because of the policy of the Railroad Administration to eliminate in so far as possible the use of box cars for carrying express and baggage in regular passenger trains.

The need for additional coaches is not so urgent, but it has been found urgent enough to lead the committee to consider the possibility of acquiring more of them. It is not unlikely that two designs of coaches may be considered, one for

through trains and one for suburban service, although the last will probably be a later development.

### Estimated Savings of \$25,000,000 in Northwestern Region

R. H. Aishton, Northwestern Regional Director, has submitted a report to the director general, in which he estimates that the total net savings to date in the Northwestern Region will figure out to \$25,229,352 annually, as follows:

|  |              |
|--|--------------|
| Reduction in passenger train service.....              | \$20,155,954 |
| Freight train service—elimination of duplication.....  | 1,338,726    |
| Chicago—unification of terminals.....                  | 940,766      |
| Twin Cities—unification of terminals.....              | 465,654      |
| Omaha—unification of terminals.....                    | 212,970      |
| Duluth-Superior—unification of terminals.....          | 126,376      |
| St. Louis-East St. Louis—unification of terminals..... | 437,466      |
| Kansas City—consolidation of live stock yards.....     | 12,948       |
| Ore operations—Lake Superior district.....             | 660,000      |
| Joint switching.....                                   | 489,618      |
| Miscellaneous economies.....                           | 388,874      |
| Total .....  | \$25,229,352 |

### Railroad Passes

As a temporary measure and until definite regulations for the issuance of passes can be provided, the following instructions as to the use of railroad passes will be observed, says a circular recently issued by the Railroad Administration:

"Until further notice passes previously issued by the individual railroads will continue to be honored over such lines.

"Annual and trip passes will be issued by the federal manager or by the general manager on roads where there is no federal manager, and will be limited to the lines over which the jurisdiction of such federal manager or general manager extends.

"Passes, annual or trip, will be issued by the federal manager or general manager on account of employees of other than the issuing line, upon request of the federal manager or general manager of such line, in the same manner that exchange passes have heretofore been handled.

"Current regulations of the Interstate Commerce Commission in the matter of issuance and record of passes must be observed."

### Traffic Assistants Meet in Washington

A two days' meeting was held Tuesday and Wednesday of last week at the office of the Division of Traffic with the traffic assistants to regional directors. Those present were: J. G. Woodworth, Northwestern region; H. A. Scandrett, Central Western region; W. B. Biddle, Southwestern region; F. LaBau, Eastern region; C. R. Capps, Allegheny region; T. S. Davant, Pocahontas region, and A. R. Smith, Southern region. The purpose of the meeting was to permit these traffic men representing the Regional Directors to discuss matters of service and practices with a view to securing uniformity as far as possible throughout the whole United States and properly and effectually to serve the public; and, at the same time, to consider any economies and prevention of waste which could be accomplished through unified operation of carriers with due regard to service to the public.

### Liberty Bonds as Security for Freight Bills

The Division of Public Service and Accounting in P. S. & A. circular No. 21, referring to paragraph two of General Order No. 25, which makes provision for the extension of credit for 48 hours after forwarding or delivery of freight, when the consignor or consignee files with the carrier a satisfactory bond, says that:

"For the convenience of the shipping public, it has been decided to accept Liberty Bonds in lieu of individual or corporate surety, as a basis for the extension of credit. These Liberty Bonds must be in coupon form, in amount required to meet the credit needs of the customer, and must be de-

posed as directed by the treasurer of the carrier. The treasurer's receipt will be given to the owner of the bonds, and arrangements will be made for their safe-keeping. Coupons will be detached and paid to the owners on the semi-annual interest dates."

#### Pensions

The Division of Public Service and Accounting is gathering detailed information concerning the pension systems and methods used by railroads for assisting their retired employees. In Circular No. 22 it has asked for a statement to be supplied not later than September 15 giving a concise and brief outline of the pension system or plan, if any, in effect December 31, 1917. If no regular system or plan was in effect and payments were made in the nature of pensions, the railroads, through their accounting officers, are asked to outline the method of calculating such payments and the method of selection of the pensioners. In addition to the foregoing, the circular also asks for full information as outlined in the following list of questions:

1. Was the system or plan continued after December 31, 1917, and is it in effect at the present time? If discontinued after December 31, 1917, advise when and why discontinued.
2. Are the payments to pensioners being made on account of the director general and treated as part of operating expenses?
3. Has the rate of payment for pensions been increased or decreased since December 31, 1917? If so, give particulars and authority therefor.
4. State the total amount of increases or decreases caused by changes in rates of pensions paid from January 1 to June 30, 1918.
5. Does the corporation or do the employees contribute to the pension fund, or to the payments that were made to pensioners subsequent to December 31? If so, to what extent and how were these contributions made and accounted for?
6. State the number of retired employees (not including officers) that were being paid pensions in the month of December, 1917.
7. State for each month separately for the period January 1 to June 30, 1918, the number of employees (not including officers) that were paid pensions and the aggregate monthly amount paid, and the amount thereof that was charged to operating expenses.
8. State the number of retired officers that were paid pensions in the month of December, 1917, and the aggregate amount of pensions paid.
9. State for each month separately for the period January 1 to June 30, 1918, the number of retired officers that were paid pensions and the aggregate monthly amount paid, and the amount thereof that was charged to operating expenses.
10. Submit a list of the names and designations of retired officers to whom pensions have been paid during the period from January 1 to June 30, 1918, and state the monthly amount of salary paid at the date of retirement and the monthly rate of the pension paid at June 30, 1918.
11. State for the month of December and separately for the months January to June, 1918, inclusive, the number of employees and officers, not included in any of the foregoing answers, that are carried on the regular payrolls, who perform little or no service or a different service than when regularly employed, and who receive full or partial rates of compensation formerly paid, but who, because of the absence of a pension plan, or because of the belief that pension plans might be discontinued, are not carried on the pension rolls.
12. State in reference to Question 11 separately, for each month, the total amounts paid, and show the accounts charged therewith and the amount distributed to each account, showing, in addition, the name of each person so appearing on the payroll for the month of June, 1918, and the amount payable to such person for that month.
13. What portion, if any, of the amount charged to operating expenses for pensions paid during the period January 1 to June 30 is chargeable to the corporation?

#### Rates on Cotton

The Division of Traffic has decided against putting into effect this year the proposal which it has had under consideration for some time, to establish carload and less than carload rates on cotton instead of the present any quantity rates. It will, however, encourage heavy loading by high density compression.

A proposal for next year now under consideration plans for carload rates with minimum of 100 standard bales per car.

#### Promotions in the Mechanical Department

The Mechanical Department of the Division of Operation has announced the following promotions: John F. Tatum has been appointed general supervisor of car repairs; F. P. Pfahler, who has hitherto borne the title of mechanical engineer, has been made chief mechanical engineer; John McManamy and George N. De Guire, assistant supervisors of

equipment, have been made, respectively, general supervisor of equipment, west, and general supervisor of equipment, east. The appointments were all effective August 3 and all the appointees will have headquarters at Washington.

#### Substitutes for Wool

The Car Service Section has taken steps to see that wool substitutes are handled promptly. In Supplement No. 1 to Circular C. S. 10, it says:

"The shortage of wool makes necessary the increased use of substitutes for wool, such as woolen rags and shoddy. As far as practicable, shipments of woolen rags and shoddy should be accepted and moved promptly on a parity with wool. The Freight Traffic Committee, North Atlantic Ports, is prepared to issue permits promptly on any such shipments destined to New York, Philadelphia and Baltimore."

#### Coal Car Supply Receiving Attention

The Car Service Section, noting the recent increases in coal car shortage evidenced in the United States Geological Survey figures, has taken steps to increase the supply of available coal cars. In Supplement 1 to Circular C. S. 13, issued last Saturday, it says:

"In accordance with the understanding expressed in Car Service Section Circular CS 13, and to avoid decline in coal loading, carriers will immediately amend their practices regarding car supply for stone, sand and gravel so as to increase cars available for coal loading as promptly and as greatly as possible. Necessary curtailment of open top car supply for stone, sand and gravel must be effected so as to least affect the movement of raw materials for blast furnace and foundry operations.

"Non-coal-producing railroads will be expected hereunder to more promptly return empty open-top cars to their coal producing connections."

#### Progress Reports on Additions and Betterments

In order that the Railroad Administration may be kept informed of the progress being made on additions and betterment work, the director of the division of capital expenditures, in D. C. E. Circular No. 9, has asked each carrier to furnish a monthly report on a special form (D. C. E. Form 10) for each project authorized where the estimated cost chargeable to capital account exceeds \$25,000. D. C. E. Form 10 contains 10 columns: (1) D. C. E. form number, (2) Serial number, (3) Total expenditure authorized, (4) Location of work, (5) General description of work, (6) Unit of measure, percentages to be used when no physical units are applicable, (7) Percentage of work completed during the month, (8) Percentage of work completed to date, (9) Probable date of completion, (10) Remarks, including anything of particular interest, especially explanations and reasons, why work is not progressing in a normal manner.

#### Official Bulletin Authorized Medium for Publicity

Walker D. Hines, assistant director general of the Railroad Administration, on August 16 issued a notice reading as follows:

"The Official Bulletin [issued daily at Washington by the Committee on Public Information] is authorized to publish all general orders and circulars by the director general of railroads, and authorized circulars of divisions and sections of the Railroad Administration at Washington, and is to be regarded as an official means of publication of the same."

#### The Pullman Car Lines

The operating department of the Pullman Company, now under federal control, will hereafter be known as the Pullman Car Lines, according to Circular No. 47 issued Saturday by

the Railroad Administration. L. S. Taylor, formerly comptroller of the Pullman Company, has been appointed federal manager of the Pullman Car Lines, effective August 17, with office in the Pullman Building, Chicago. He will have jurisdiction over all departments, reporting to the director of the division of operation.

#### Coal Car Movements

The report made to Director General McAdoo Saturday by the Car Service Section of the Railroad Administration on the quantity of coal of all kinds loaded by roads for the week ended July 27, 1918, shows 269,173 cars as compared with 270,434 the preceding week and 239,007 in the same period of 1917. A summary of the report follows:

|                                | 1918           | 1917           |
|--------------------------------|----------------|----------------|
| Total cars bituminous.....     | 224,572        | 193,144        |
| Total cars anthracite.....     | 40,942         | 43,050         |
| Total cars lignite.....        | 3,657          | 2,813          |
| Grand total cars all coal..... | <u>269,173</u> | <u>239,007</u> |

A summary of the decreases and increases in coal loaded since January 1, 1918, up to and including the fourth week of July, 1918, as compared with the same periods of 1917 follows:

|   | Decrease    | Increase     |
|---|-------------|--------------|
| Month of January.....                   | 79,172 cars | .....        |
| February .....                          | .....       | 31,250 cars  |
| March .....                             | .....       | 46,613 cars  |
| April .....                             | .....       | 73,408 cars  |
| May .....                               | .....       | 84,998 cars  |
| June .....                              | .....       | 88,840 cars  |
| First four weeks of July.....           | .....       | 113,188 cars |
| Increase, 1918 over 1917, 359,125 cars. | .....       | .....        |

#### Ticket Agents' School

The school for training women as ticket sellers, which has been held in the Southern Railway Building at Washington, has now started on its second session. The first session ended on August 10. Of its original enrollment of 47, 27 were placed at union stations or consolidated ticket offices, 10 withdrew because of sickness or other causes, seven were dropped and one remained unplaced. The enrollment in the second session consists of 40. The day students receive \$50 a month pay and the night students \$25 a month.

#### Hearings Before the Board of Wages

The Board of Wages and Working Conditions has finished its hearings in connection with the wages of telegraphers and telephoners, train despachters, agents located at stations, line repairers, lever men on interlockers, tower men or train directors, lock operators and staff men and is now holding executive sessions to formulate its recommendations for the director

general. Its recommendations concerning the maintenance of way and bridge and building employees and those concerning clerks, and also common laborers around stations and warehouses have been before the director general for his consideration for some days and an order covering the matter is expected shortly.

#### Additional Short Line Railroads Under Federal Control

The Athens Terminal Company, Athens, Ga., the Augusta Belt, Augusta, Ga., and the Atlantic & East Coast, Jacksonville, Fla., have been added to the list of roads taken over for operation by the Railroad Administration.

#### Weekly Cash Report

The following supplement No. 1 to "General Order No. 23" bears the date of August 13:

Effective with report for the week ending August 17, 1918, the following instructions shall govern the rendering of the Weekly Cash Report, Form T-5:

(1) Where federal treasurers have been appointed their reports shall include only transactions affecting the cash controlled by them, in accordance with the provisions of General Order No. 37. Reports as to transactions affecting other (corporate) cash will not be required.

(2) As and when federal treasurers are appointed they shall commence to render the reports to include only transactions affecting the cash controlled by them, in accordance with the provisions of General Order No. 37. Reports as to transactions affecting other (corporate) cash may then be discontinued.

(3) Otherwise the reports shall continue to be made up as at present.

(4) These instructions also, of course, apply to all acting federal treasurers, as well as to the treasurers whose nominations have been confirmed.

\* \* \*

Sherman Whipple, of Boston, has been offered the position of attorney for the Shipping Board. John Barton Payne, who has been acting as attorney for both the Shipping Board and as general counsel and head of the Division of Law of the Railroad Administration, will devote his entire time to the latter.

\* \* \*

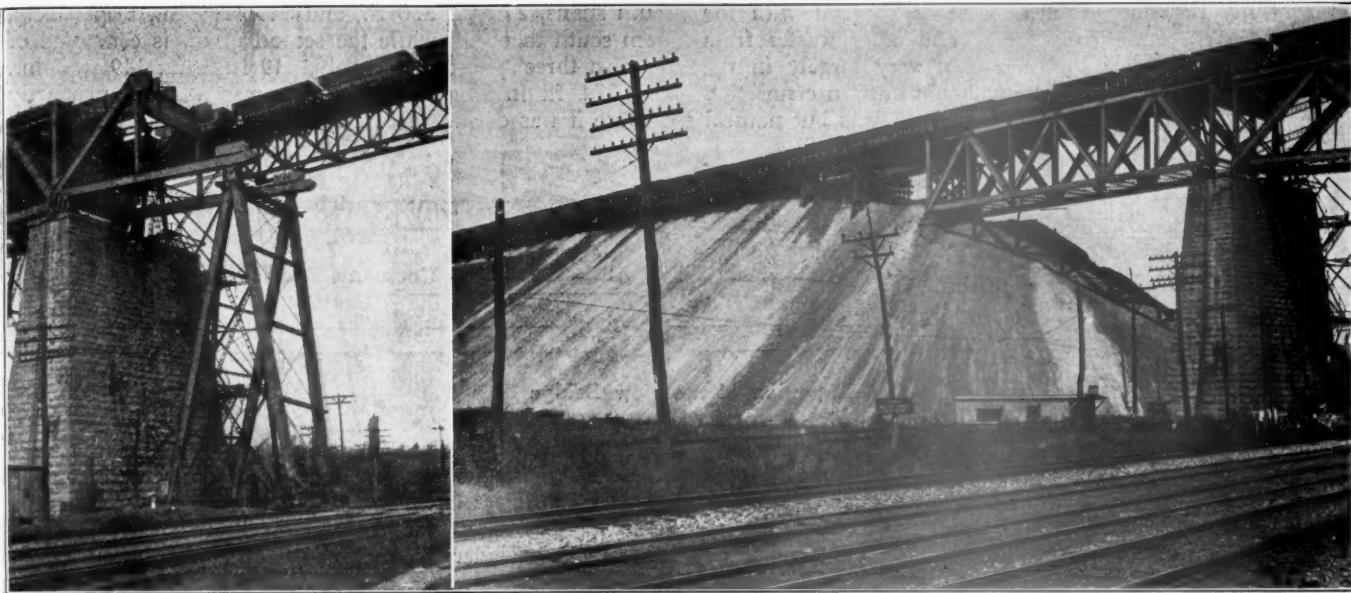
The Association of Railway Telegraph Superintendents has been added to the approved list of railway associations.

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A Small Munition Station, the Shells Camouflaged by Branches of Trees



*Temporary A-Frame Tower Used to Erect Span 3*

*South End of the Large Embankment During Construction*

## New Bridge on the B. & L. E. a Notable Structure

### Continuous Trusses and Unique Erection Methods Lend Special Interest to This Large Project

ON MONDAY JULY 22, a unit of three continuous spans of the Bessemer & Lake Erie bridge over the Allegheny river, near Blacks Run, Pa., was moved laterally 16 ft. 3 in. Nine days later a second unit of 983 ft. was moved in a similar manner. As the first unit was 1,140 ft. long and weighed 13,000,000 lb. it is the heaviest and longest bridge structure ever moved in this manner, while the continuity of both the vertical and horizontal trusses, continuous over four supports, introduced complications not ordinarily encountered in this class of work. These two noteworthy incidents mark important steps in the construction of the largest railroad bridge completed this year, and one which embodies a number of unusual features in design and construction practice.

This project consists of the renewal of a single track bridge built in 1896 which consisted of five deck truss spans varying from 207 ft. to 520 ft. in length with an over-all length of 1,476 ft. and flanked on the north end by a steel viaduct 1,736 ft. long. The track was on a grade of 0.48 per cent ascending southward with the elevation near the south end of the structure 160 ft. above water level in the river. This structure has been replaced by a new double track superstructure on the same site, utilizing the old substructure in a large measure and replacing the viaduct by an embankment. The grade of the track at the north end has also been raised to give a level crossing.

#### Many Notable Features

Among the unique features involved in this project were the use of two sets of continuous deck trusses, each extending over three spans, the erection of the new superstructure alongside the old one on extensions to the piers and its subsequent rolling laterally into place, the use of a design loading of Cooper's E-75, the introduction of special steel for both tension and compression members, the spacing of the double tracks at 14 ft. 11 in. to permit of the future use of gauntlet tracks in the event of the four-tracking of the line, and the construction of an embankment 120 to 140

ft. high for which a temporary steel viaduct was built to facilitate the placing of the filling material.

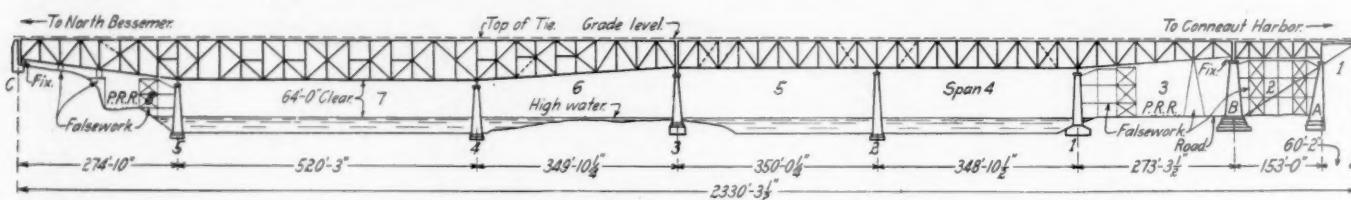
These special measures were evolved in the solution of the problems presented by the situation, the more important of which are mentioned below. The traffic on this line is heavy as indicated by the fact that the net ton miles handled per mile of line on the Bessemer & Lake Erie is exceeded by only one road in the country, the Pittsburgh & Lake Erie. During the navigation season on the Great Lakes above 52 trains, of which about 36 are three-engine through freights cross this bridge each 24 hours. Accordingly it was imperative to interfere as little as possible with the movement of the traffic during the bridge erection and trestle filling operations. The behavior of the river at some times of the year together with the great height of the structure were unfavorable to the use of falsework. The masonry piers, while in an excellent state of preservation and on secure foundations, are of such proportions as to offer limited resistance to traction or braking forces. Surveys for a relocation of the line across the river with a view to selecting a site for an entirely independent structure, demonstrated the economy of reconstruction on the existing site with the use of the old piers.

The loading imposed on the existing structure was so heavy as to require its replacement although it had been designed for Cooper's E-40 loading. Unlike the plan followed in some other cases where a high loading has been adopted in the design of a new structure, the unit stresses used on this structure were low, except as raised to allow for the use of high strength steel. Consequently the new structure is one of the heaviest capacity bridges in the country. This heavy loading is explained by the fact that the traffic is largely ore, which at present imposes a load of 5,000 lb. per lin. ft. of track. It was concluded that any future increases in train loading on the railroads of this country were very likely to be obtained in a maximum degree on a road with a traffic of this character.

One further condition which influenced the work is the

fact that the Bessemer & Lake Erie is charged with the disposal of large quantities of slag and other wastes from the steel mills, which have been used very largely in the past in the construction of large embankments in connection with grade revision work. Consequently it was but natural

south spans, 272 ft., 520 ft., and 349 ft. 9 in., respectively, from south to north, while the second group is composed of the next three spans, respectively, 349 ft. 9 in., 349 ft. 7 in., and 274 ft. in length. This plan was adopted primarily because it was deemed necessary to use the cantilever method

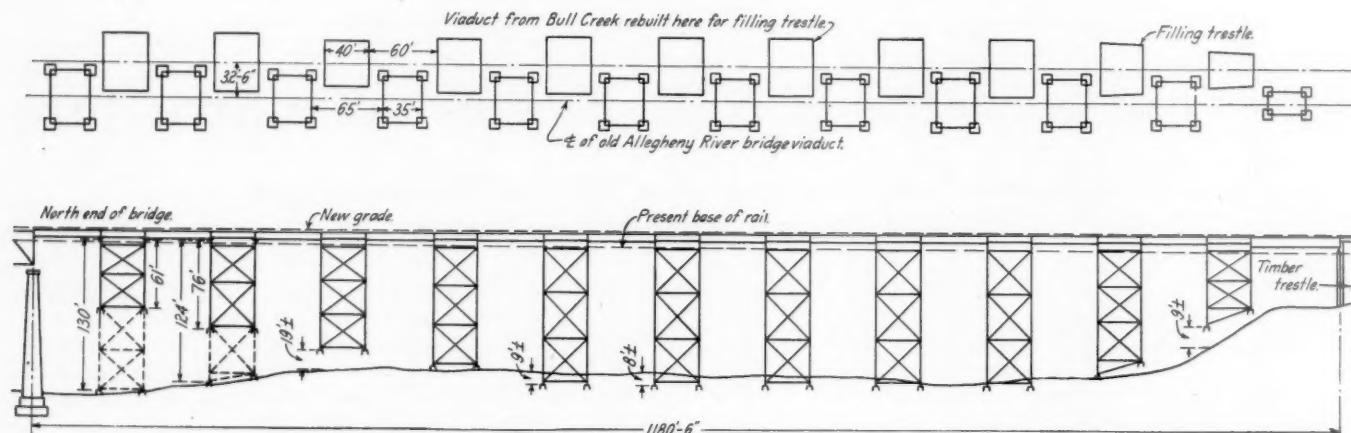


Elevation of the New Bridge

that this project should include the replacement of the approach viaduct on the north side by an embankment.

The arrangement and length of spans shown in the elevation of the new structure were determined essentially by the position of the old piers, except that the south spans were

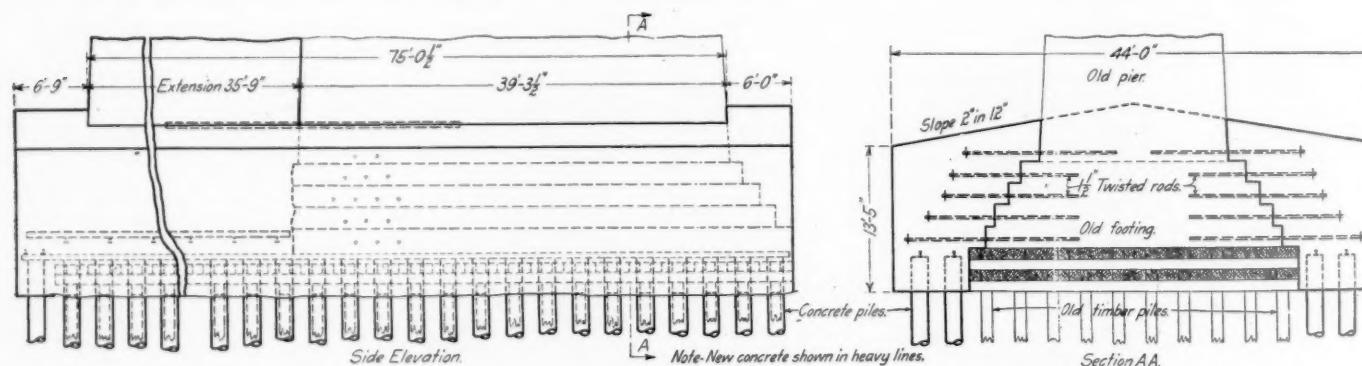
of erection and these continuous structures offered the most effective use of the extra material required in the trusses for the cantilever erection. A further consideration influencing this plan was the weakness of the piers above referred to. Under the adopted plan it was possible to



Elevation of the Temporary Filling Viaduct and Its Relation to the Old Structure

increased from 207 ft. to 274 ft. by throwing the south abutment further back into the bluff and that three new spans were introduced to replace the south end of the viaduct which was otherwise converted into an embankment. These spans are 272 ft., 150 ft. and 60 ft. long, respectively, from south

locate the fixed end of the south group of spans on the new south abutment and that of the north group on the new pier B. With these two supports designed to take all of the longitudinal, i. e., braking or traction stresses of the six spans, the five old piers intervening were relieved entirely of



Method of Enlarging the Footing of Pier 1 to Increase the Bearing and Provide for the Extension

to north. These changes entailed the construction of a new south abutment, two new piers, A and B, and a bank block or pocket abutment in the head of the new embankment.

#### Continuous Construction Adopted

By far the most interesting feature of the project is the use of the continuous spans. One group includes the three

these longitudinal forces since the superstructure was supported on them only through roller bearings.

To introduce a minimum of interference with the operation of the existing line it was concluded to build the new superstructure alongside the old, turn traffic over the new work and after the old spans had been removed, to slide the new structure into a central position on the piers. Ow-

ing to the great loads to be carried and the height of the structure it was concluded that this could best be done by extending the existing piers to the west and building the new piers and abutments wide enough so that the new superstructure should be erected entirely on the masonry.

#### The Substructure

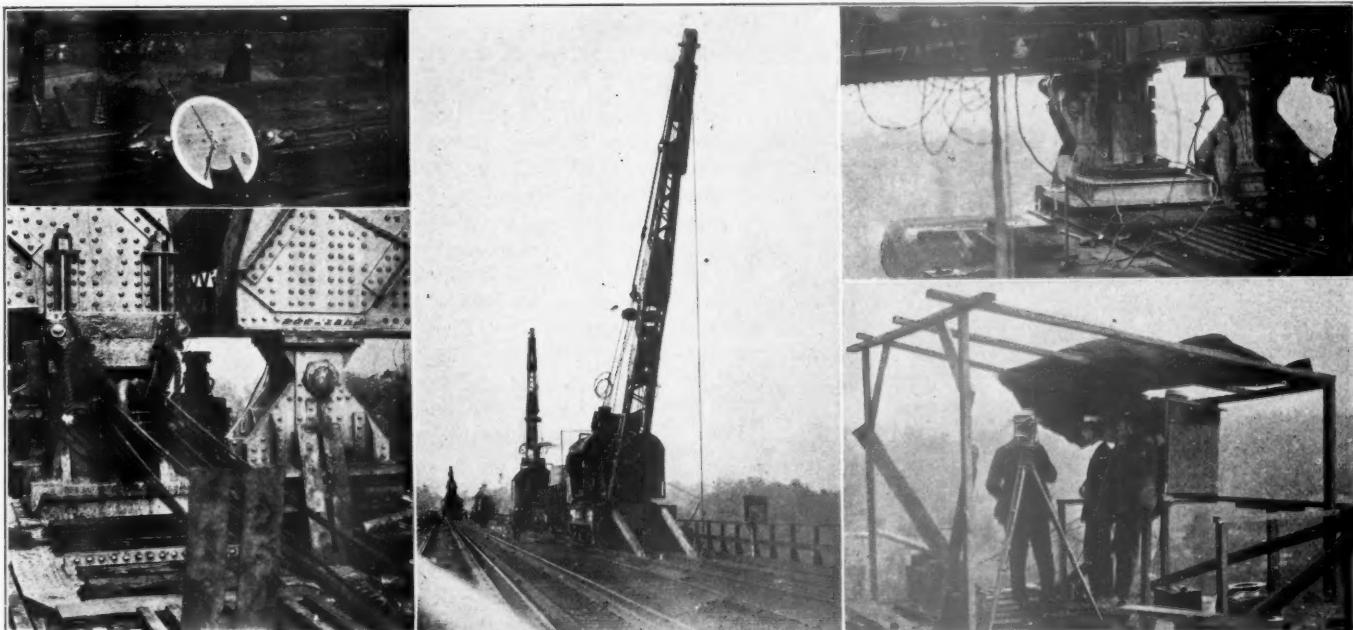
The length of the extension to the piers was practically equivalent to the original length and they were given the same face and end batters. Beaver Valley sandstone, the same as that used in the original work was obtained and the junction of the new and old work was handled in such a way as to conceal it entirely.

For the purpose of avoiding an excessive length in the additions to the piers the bearings of the west tracks when in the temporary position came very close to the west ends of the piers, and because the reactions were especially high during certain periods of the cantilever erection, it was essential to secure high strength in the pier copings. The stones in the upper five courses of the masonry were tied together with cramps and with additional tie rods between stretchers on opposite faces of the pier. Above these a concrete coping was

receives a greatly increased load in the new structure since it now carries one end of the 273-ft. span to the north, whereas there was formerly only a 65-ft. viaduct span on that side. Accordingly the pile bearing had to be increased greatly. The manner in which this is accomplished is shown in one of the drawings.

The new pier *B* is located close to the site of one of the old viaduct towers and rather elaborate under-pinning was necessary to support the tower during the progress of the foundation work for the pier. Pier *A* which is buried in the embankment for the most of its length is provided with a cut-stone face only above the embankment surface.

With the exception of the south abutment which was built by company forces, all the foundation and masonry work was done by the Arthur McMullen Company, New York. The contractor used two concrete plants, one north of the road for piers *A* and *B* and one south of the highway for all of the other piers. The concrete for piers *A* and *B* was transported by a tower and spouting except for the very top which was handled with a derrick and bucket. For the other piers a more elaborate method of transporting the concrete was necessary. The concrete was delivered to the forms in bottom



Dynamometer on One of the Hauling Lines

Hauling Tackle on Pier 1 Attached to North End of Span 3

Locomotive Cranes Were Used on the Hauling Lines from Two of the Piers

Arrangement of Jacks and Rollers on Pier 1 Before Spans Were Moved

Transit and Telephone Station for Observing Movement of the Spans

built which was very heavily reinforced. As a further precaution each pier was provided with a grillage of longitudinal I-beams to distribute the applied load and to serve as the track on which the spans were rolled into final position. Owing to the presence of the old spans during the construction of the masonry and the fact that the elevations of the new and old bridge seats varied widely, it was not possible to place these grillage beams on the old portions of the piers until the old steel had been removed and the old portions of the piers were rebuilt to the new level.

The treatment of the foundations differed somewhat in the several piers. Piers 1, 2 and 4 are on pile foundations, piers *A*, *B* and pier 3 on the island are on gravel foundation, and pier 5 and abutment *C* are on rock. The foundation work involved no special difficulty and was conducted by open excavation with United States steel sheet piling. For piers 2 and 4 the new work is supported on the old footing extensions and on new footings supported by the piles. Pier 1

dump buckets handled by stiff-leg derricks, these buckets being delivered to the derrick at each pier on flat cars hauled by a dinky locomotive as far as pier 4. For pier 5 it was necessary to ferry these buckets across the south channel of the river.

#### The Superstructure

The outline of the trusses in the elevation of the bridge shows that spans 2, 3, 4 and 5 have simple panels, span 7 has subdivided panels and spans 6 and 8 possess a combination of the two. Span 2 has riveted joints throughout, spans 3, 4 and 5 are essentially riveted spans with stiff top and bottom chords and diagonals except for the tension diagonals of the second panel from each end which are eye-bars. In spans 6, 7 and 8 a larger proportion of eye-bars are used, while the top chord ties connecting the spans at the piers are also eye-bars in each case.

Another unique feature of the truss framing is the detail of

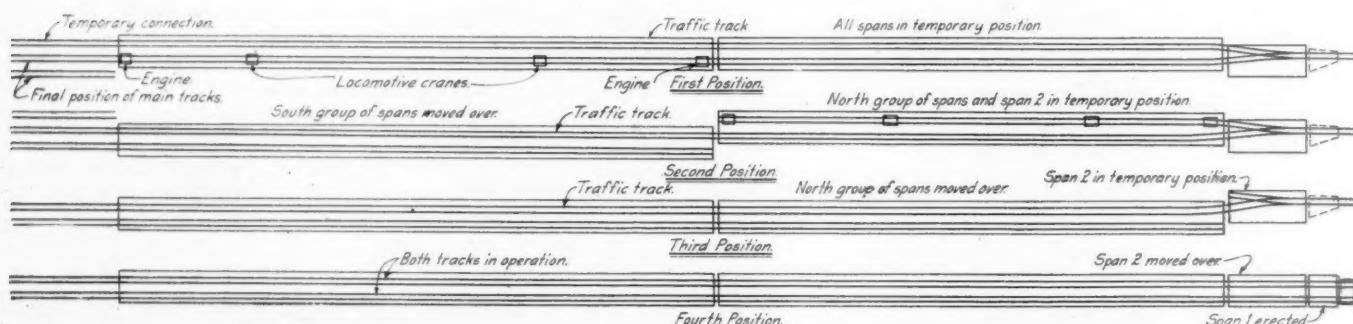
the bottom chord intersection over the intermediate piers, this being similar in all of the continuous spans. It consists of a pair of very large gusset plates stiffened by vertical and horizontal diaphragms and having no stiff connection with the rest of the structure except for a riveted connection to the post of the pier bent. These two gusset plates are equipped with four pin holes, two of  $11\frac{1}{2}$  in. diameter for the bottom chord and two of 14 in. diameter for the end diagonals. This construction also serves as the bearing shoe since it rests directly on 11 segmental rollers 24 in. in diameter and 9 in. wide.

The posts of each pier bent are connected near the bottom

was supplied by safety stringers 30 in. deep placed directly over the outside faces of the top chords upon which they are supported at the panel points only. This construction insures a maximum protection to the structure in the event of derailments.

#### Special Expansion Joint Necessary

Owing to the location of the fixed ends of the two units of continuous spans at the outer ends, all of the change of length in 2,123 ft. of the structure is concentrated at the junction of the two groups over pier 3 where, with the usual



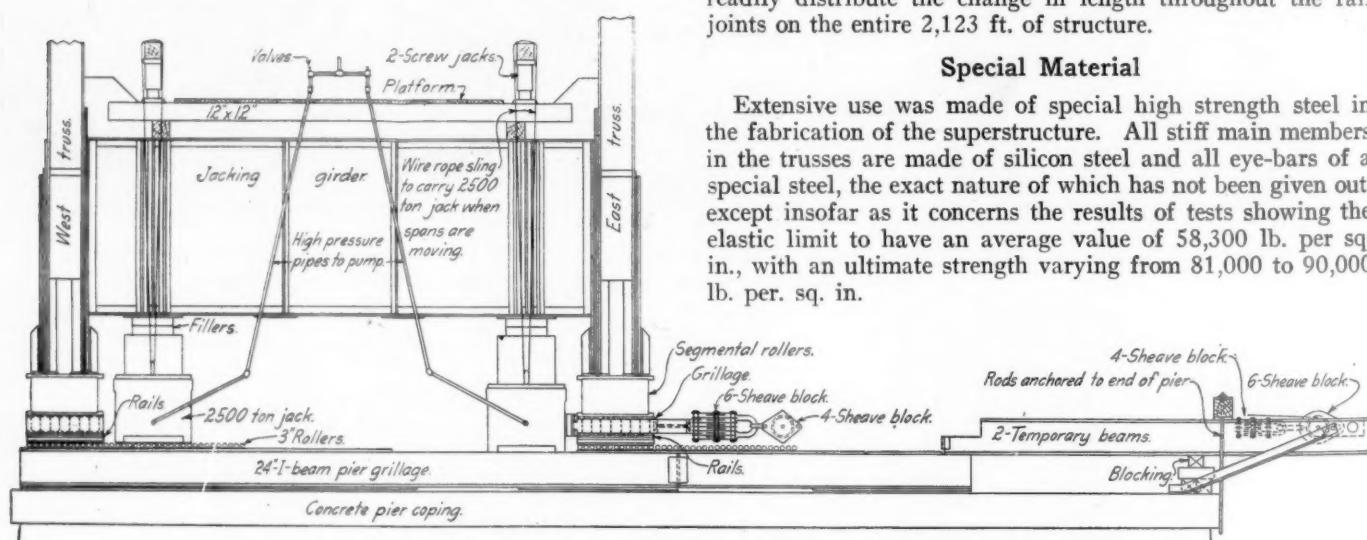
Track Arrangements During the Successive Shifts of the New Superstructure

by a jacking girder heavy enough to sustain the entire superstructure load clear of the bearings when jacks are applied under its bottom flange. This arrangement is a necessary provision for adjusting the elevation as required during the erection and to allow for any future adjustment of the pier reactions by varying their relative elevations. All adjustments subsequent to the completion of the bridge will be made at the end bearings of each set of continuous spans, where a special wedge arrangement has been provided to increase or decrease the distance between the bottom of the truss and the top of the pier as the span is raised or

range of temperature, there would be a variation of 22 in. This unusual movement is provided for by introducing a pair of floating stringers under each track, supported on brackets projecting from the adjoining floor beams. Slotted holes are provided in the connections to each bracket, so that the floating stringers are free to move with respect to both spans. Although this great variation may take place in the length of the steel work, no provision has been made for an expansion joint in the rails. As this change of length will take place gradually throughout the seasons of the year, it is assumed that the movement of the track under traffic will readily distribute the change in length throughout the rail joints on the entire 2,123 ft. of structure.

#### Special Material

Extensive use was made of special high strength steel in the fabrication of the superstructure. All stiff main members in the trusses are made of silicon steel and all eye-bars of a special steel, the exact nature of which has not been given out, except insofar as it concerns the results of tests showing the elastic limit to have an average value of 58,300 lb. per sq. in., with an ultimate strength varying from 81,000 to 90,000 lb. per. sq. in.



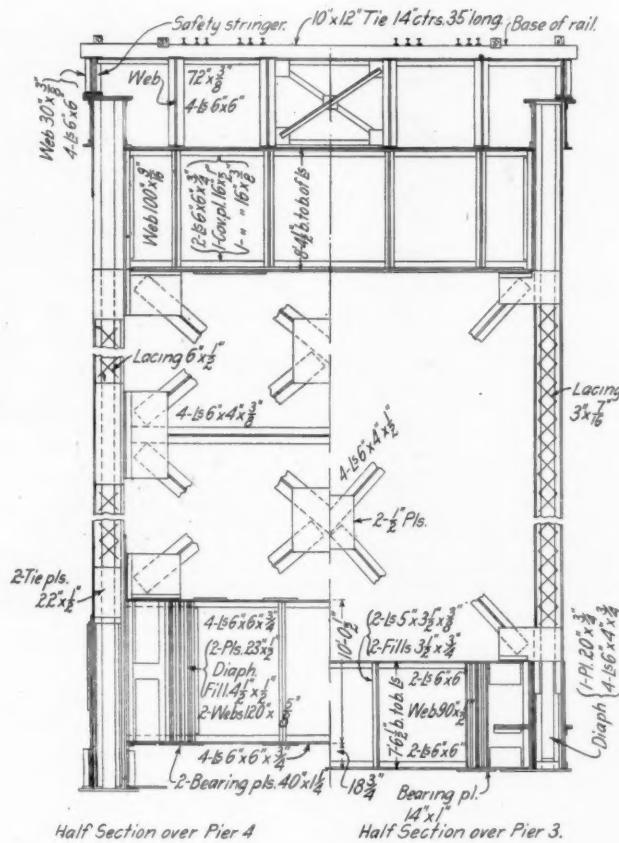
Jacking and Hauling Rigs on the Intermediate Piers

lowered by means of jacks. This is clearly shown in one of the photographs. A typical cross section of the spans shows that the floor beams are framed between the posts with their top flanges approximately level with the lower sides of the top chords. The four lines of stringers which rest on the top flanges of these floor beams are 6 ft. deep, so that the top flanges in turn are about 32 in. above the tops of the chords. Since the track ties extend the full width of the structure, some support was necessary under their outer ends and this

The bridge floor has a deck of ordinary construction except that the ties are unusually heavy, being 10 in. by 12 in. spaced 14 in. center to center and put down with a full length of 36 ft. In renewing these ties under traffic it is probable that half lengths will be used on account of the difficulty of putting a full length tie into place. The rail is 100 lb. A. R. A., type-B, with heavy angle bars and 9-in. by 10-in. tie plates. The inside guard rails are of used 100 lb. section also placed on tie plates.

### Erection Method

The erection proceeded from both ends of the bridge, terminating in the center panel of span 7. Accordingly it was necessary to erect spans at both ends of the structure on falsework, that is, span 8 on the south and span 2 and also span 3 on the north, since span 2 did not enter into the cantilever erection scheme. Owing to the presence of a public highway and the tracks of the Conemaugh division of the Pennsylvania Railroad underneath span 3, it was necessary to substitute a steel A-frame tower for the usual



Cross Section of the Superstructure

form of falsework under the north half of this span, and proceed by cantilevering over the Pennsylvania Railroad tracks. This entailed the use of a temporary counterweight of steel rails at the north end of the span, which was also required when cantilevering the adjoining longer span to the south. The falsework under span 8 was of a special nature to fit the irregular ground contour and avoid the tracks of the Oil City line of the Pennsylvania.

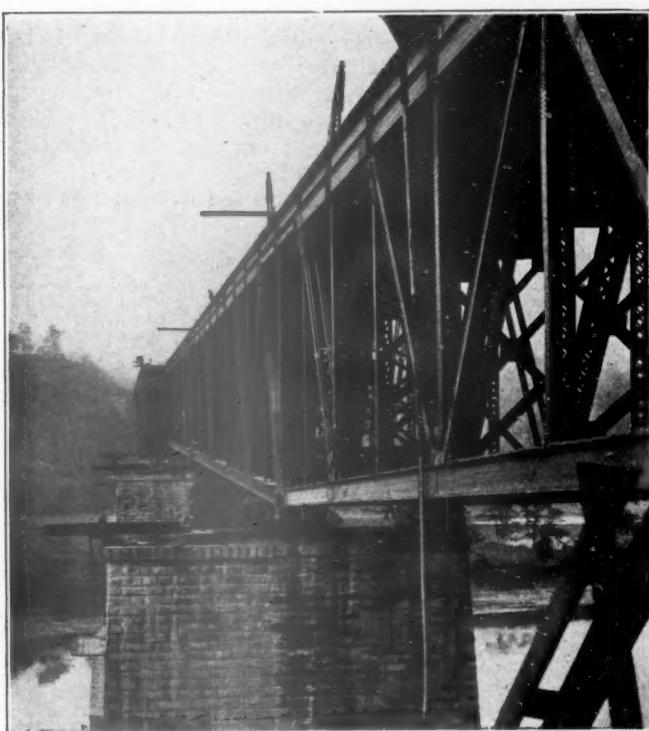
The erection was conducted by means of bridge derrick cars running on a track located centrally on the bridge and supported on the two inside track stringers, the outside stringers and safety stringers being omitted until the spans were brought to bearing on the piers. The roller bearings under the spans were secured against movement during the period of erection by means of plates bolted to their ends.

In projecting the 350-ft. spans from the adjoining spans to the north, cantilever deflections occurred at their free ends to such an amount that the panel points over the piers were 40 in. to 43 in. lower than the position determined for them in the design. Consequently it was required to jack up the ends of each span as it was landed on the pier by this amount. For the purpose of erecting span 6, it was connected temporarily to span 5 by short eye-bars in the top chords and bearing blocks between the bottom chords over

pier 3. These eye-bars were made of such a length as to tip up span 6 by an amount that raised the south end 13 in. over pier 4. Accordingly it was necessary to jack this span up only 30 in. instead of 43 in. to take out the cantilever deflection. After span 6 was in place the connections at pier 3 were cut away with the oxy-acetylene flame making the two spans independent.

To close the middle panel in span 7 the projecting arms were pushed towards each other by rolling on the expansion bearings of piers 4 and 5, while the bearings on pier 3 and abutment C were lowered so as to raise the projecting cantilever arms above the final position. This shortened the panel length in the bottom chords and lengthened the panels of the top chords, producing a condition under which the closing members were readily introduced.

After the erection of the trusses had been completed, the



Views of Spans 3, 4, and 5 Just Before Being Moved

outside stringers of the floor system were added and the deck was completed, laying both the tracks in final position. One of the drawings shows the arrangement under which these tracks were used during the successive stages of the work. During the wrecking of the old spans the west track was used by the traffic while the east track was occupied by the wrecking equipment.

The old trusses were advertised for sale but, no purchaser being found, it was decided to scrap the material. Accordingly the trusses were supported by beams and cables from the new structure and the members were cut apart with the oxy-acetylene flame. After completing this work the tops of the old portions of the piers were brought to the same level as the tops of the new portions and the beam grillages were placed and spliced to the portions under the new steel. The track diagram also shows the shifts made in the track during the stages of moving the new spans into final position on the piers. The south group of continuous spans was moved first, this being the longest and heaviest section. This was followed in turn by the next group and finally by span 2. By making use of one or the other of the two tracks on the bridge in each unit it was possible always to provide

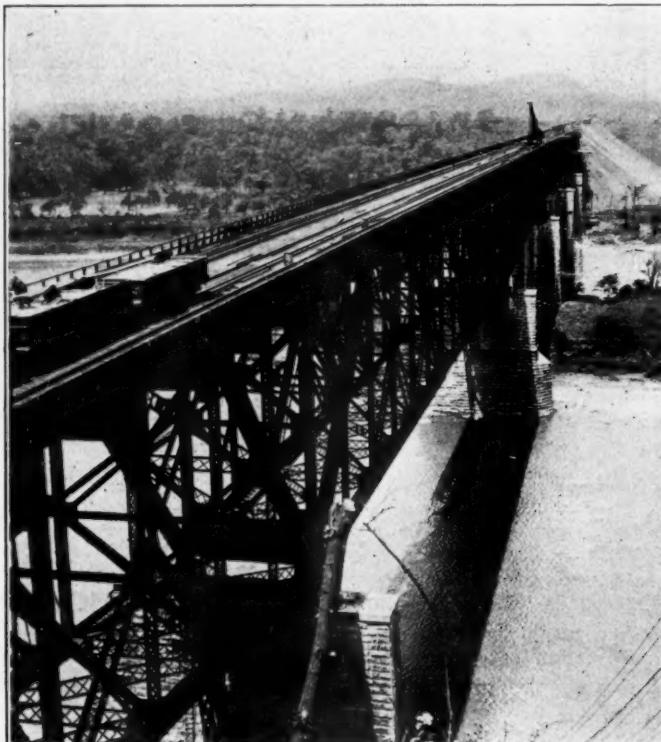
one through operating track throughout each of the successive stages of the work.

#### Shifting the Spans into Place

The operation of rolling was accomplished in a manner similar to that previously used in like situations but with considerable more refinement as required on account of the greater length and weight of the load and the continuity of the structure. One of the plans shows a typical arrangement of jacking and pulling rigs for the intermediate piers of both units, *i. e.* that carrying the heaviest load. Here two 2500-ton jacks built for use in closing the Hell Gate arch were installed under the jacking girders, at the ends of the continuous units 500-ton jacks were adequate, while under the ends of span 2, two 300-ton jacks sufficed.

These jacks were used both to raise the bridge for putting it on the rollers and later to lower it after the rollers were removed, and since the bridge was moved between these two operations, the jacks had to be moved with the bridge. This was accomplished as indicated in the sketch. Small hand jacks standing on the floor beams directly above the large jacks served to lift up the larger ones by means of cables and hold them clear of the rollers while the bridge was moving.

The moving tackle at each pier consisted of a  $\frac{3}{4}$ -in. wire rope, rove through a set of blocks connecting the east bearing grillage with a pair of I-beams fastened to the end of the pier, the wire rope being carried by snatch blocks to a hoisting engine standing on the deck of the bridge. In the case of the intermediate piers the rope tackles were in

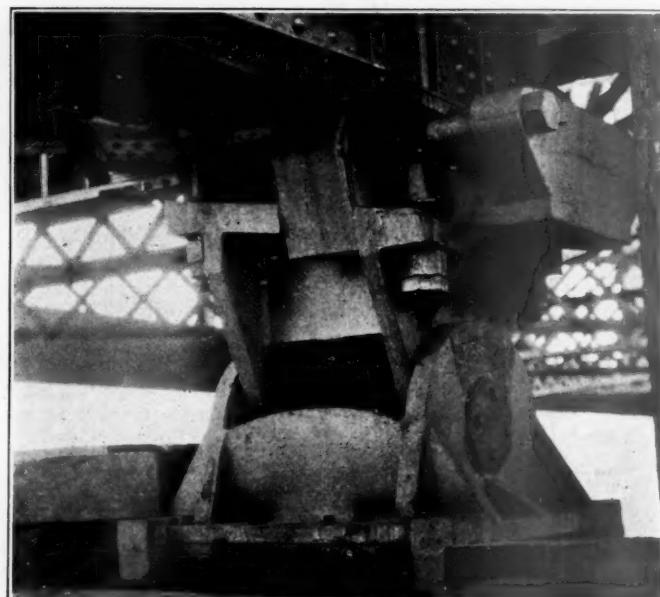


A View of the New Bridge from the South

19 parts, this multiplication being obtained by a combination of two six-sheave blocks and two four-sheave blocks as shown.

Unified action being vital, special attention was given to arrangements through which could be secured. One essential was that the progress of the shift be practically the same at each pier, otherwise excessive stresses might be developed in the top and bottom lateral systems of the spans, since these also constituted systems of continuous trusses. Therefore, a convenient arrangement for observing the relative movement on each pier was paramount.

This was accomplished with the aid of two base lines, a moving base line established on the spans to be moved, between the east rail of the east track and the ends of the ties, and a second base line, which may be called the fixed base line, located 16 ft. 3 in. to the east of the moving baseline and established by points on the ends of the spans nearest those to be moved. One point on the fixed base line was marked by a target while the other was covered by a transit. Sight boards marked at intervals of half feet for a length of 16 ft. 3 in. were fixed to the deck of the spans to be moved in a horizontal position with the zero point coinciding with the fixed base line and the 16-ft. 3-in. mark



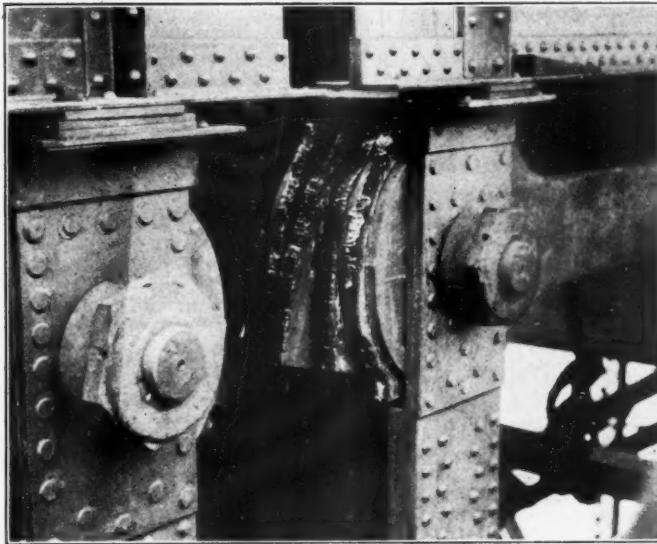
Wedge Arrangement on Bridge Shoe to Adjust End Elevations of the Continuous Trusses

on the moving base line. Then with the transit set on the target, the sight boards could be read simultaneously as the bridge was moved. This is shown in one of the photographs. Another facility was telephone communication with both the jacking crews on the piers and with the engineers of each of the hoisting engines on the deck. These telephones were placed in a position close to the transit so that the foreman, standing close to the man observing the movement, could readily communicate with all of the jacking and engine crews. The shifting of three units was accomplished in each case without any unforeseen circumstances and the obstructions to traffic in no case exceeded five hours.

Incidental to the operation necessary for the shifting of the structure, special provision was made for the securing of data that would be of value in the working out of similar problems for other structures. Readings were taken of the hydraulic jack pressures so that the pier reactions of the two continuous spans could be determined and checked against the calculated values. Dynamometers were also introduced into the lead lines from the pulling tackle so that readings taken during the movement of the spans, after correction for the friction in the sheave blocks, would give a measure of the rolling resistance under the conditions obtained. One of these dynamometers is shown in a photograph. These were graduated to a maximum of 10,000 lb., two being used in parallel on the lines from the intermediate piers where the loads were greater than could be recorded on one instrument alone. The readings were taken simultaneously on all indicators at intervals of 5 sec. during the first two feet of the movement, after which they were removed to avoid interference with the winding of the cables on the drums. The data thus obtained are now being analyzed.

### The Embankment

Not the least interesting of the various divisions of this project was the making of the enormous fill to take the place of the north approach viaduct. The necessity for minimum interference with the traffic, both in the construction of the fill and the erection of the piers made it desirous to conduct these operations from an independent track and



Junctions of Spans 5 and 6 Over Pier 3, Showing Ends of Short I-Bars Which Were Burned Away

this led to the use of a steel viaduct salvaged from Bull Creek in consequence of a change of line. This was erected parallel to and 32 ft. 6 in. west of the center line of the old viaduct, with the track coincident with the new grade line.

As the planes of the inside batters of the two viaducts intersected above the ground surface, it was necessary to space the towers of the temporary structure between those of the original viaduct. Therefore, since the old structure had girder spans of 35 ft. over the towers and 65 ft. clear and the Bull Creek viaduct had 40-ft. spans over the towers with 80 ft. clear spans, it was necessary to dispense with the 80 ft. girders and use 60 ft. spans collected from various sources for the clear spans of the temporary viaduct.

Since the contour of the valley originally occupied by the temporary viaduct was not the same as that of the new site, three towers near the center were too tall and three towers at the south end and two at the north end were too short for the new site. Accordingly the long columns had to be placed in excavations of which one was 12 ft. in depth and the short ones had to be set on towers made of pile bents, in one case 19 ft. high, or lengthened out with extensions of structural steel. One of the drawings shows how this was accomplished. Concrete foundations were provided for the temporary structures in all cases where the columns were not set up on the pile towers.

The fill is about 1,900 ft. long and to date has taken 33,500 carloads of graduated slag and other mill waste at an average of 30 cu. yd. per car. The material is delivered in ore cars returning from the mills to the lake ports which are set out at the station north of the bridge to be handled onto the filling trestle by work trains. The material is excellent for filling; it does not settle appreciably and is not subject to slipping, nor does it wash excessively. The only objection, that of dustiness experienced whenever any amount of flue waste was present with the slag, was overcome by wetting the material before delivering on the fill. This was made possible by the installation of a 50,000-gal.

tank supplied with water from the river, with a spout in a position so that the water could be run into the cars as they were hauled by. As a result the dust nuisance to the surrounding country was avoided, the fill was compacted, the dumping of the cars made easier and the working conditions for the men greatly improved.

The filling was conducted from the temporary trestle until the embankment had been completed to within 15 ft. of the top, when it was found that the lateral pressure of the new fill was crowding out the bents of the old viaduct, two outer columns near the south end being seriously buckled. Subsequent filling was in consequence done from the old trestle, principally after the progress in the erection of the bridge had permitted the transfer of the traffic to the new spans and the temporary viaduct. The fill will be the last part of the project to be completed and will occupy several months' time.

Work on this project was started in April, 1916, the erection was commenced about a year later, and was finished



East Side of Spans 3, 4 and 5 Before Being Shifted, Showing Position of the Sight Boards

early in August of this year. The structural steel was fabricated and erected by the American Bridge Company, and the engineers of this company prepared the design in collaboration with H. T. Porter, chief engineer of the Bessemer & Lake Erie, who exercised general supervision over the entire project. W. H. Slifer was resident engineer on the work for the railroad.

**SPEEDY RAILROAD BUILDING IN FRANCE.**—A railway 130 miles in length behind the French front has been built in less than 100 days, and on August 15, according to press despatches, was opened for traffic. Its purpose is to improve the communications between the northern and southern parts of the northern railway system. The construction of the line involved the building of two important bridges and a tunnel some 375 yards in length. Premier Clemenceau and Albert Claveille, the Minister of Public Works, were present at the ceremony of putting the new road into operation. The premier congratulated the engineer in charge of the work and the man who had performed the task. "All France," exclaimed the Premier, "is working until the day when victory shall come—a day of which the dawn is breaking."

## Orders of Regional Directors

**Y.** M. C. A.—The Southwestern regional director has asked for detailed information concerning the contributions made to the Y. M. C. A.

*Aisle Carpets in Passenger Coaches.*—The Southern regional director has extended to dining and cafe cars his previous instructions directing the discontinuance of the use of aisle carpets in passenger coaches.

*Roads Relinquished from Federal Control.*—The regional director of Southwestern railroads announces that the Louisiana Railway & Navigation Company has been relinquished from federal control.

*Transfer of Bad Order Cars.*—The Southern regional director has emphasized the necessity for sending in to the regional director detailed information concerning cars that are being sent from one road to another for repairs, in order to relieve the bad situation on various roads.

*Box Cars in Passenger Trains.*—Federal managers of the Southwestern region have been instructed that box cars should not be handled in passenger trains except where mixed train service is operated and when necessary in troop trains for buffer purposes and for the handling of supplies and other material.

*Discontinuance of Sale of Liquors.*—General Order No. 39, prohibiting the sale of liquors and intoxicants in dining cars, restaurants and railroad stations under federal control is applicable to all steamers, vessels, wharves or other places under control of the United States Railroad Administration in connection with its operations on the water.

*Mexican Labor Agent.*—In a circular dated August 17, the regional director of Central Western railroads announces the appointment of Avery Turner as representative of the Railroad Administration at El Paso, Tex., in charge of the distribution between railroads of the Mexican labor supply available at that and other ports of entry to this country.

*Damage to Freight Cars in Yards.*—The Central Western director has emphasized the necessity for proper inspection of hand brakes and other safety appliances to overcome the fact that much damage to cars in yards has been due to hand brakes not being properly maintained, thus making it impossible for the car riders to control the cars they are handling.

*Lumber from the South.*—The railroads in the Central western region have been asked to anticipate, so far as possible, their requirements for cross ties and lumber from southern territory for the coming winter and to move from the south during the next two or three months as much of this traffic as possible, as by so doing they will aid materially in preventing congestion at Ohio River gateways.

*Standard Form for Stationery.*—The question has arisen, says the Southern Regional Director, whether, in providing stationery, a particular line shall be designated "Railroad" or "Railway," according to the word used in the corporate title. Decision has been reached that the word "Railroad" shall be uniformly used; for example, "Southern Railroad," although the name of the corporation is "Southern Railway Company."

*Attempts at Train Wrecking.*—The Military Intelligence Branch of the War Department requests that all employees along the lines of the carriers shall be instructed in case they notice any preparation for or intentional attempts at train wrecking or derailment, to at once notify Colonel M. Churchill, General Staff, Chief, Military Intelligence Branch, Executive Division, 1330 F street Northwest, Washington, D. C.

*Fire Prevention.*—The regional director of Central Western railroads calls attention to the fire damage to station buildings and grain elevators caused by placing boarding

cars of construction and repair trains on tracks close to buildings; by dumping hot coals out of stoves without regard for the proximity of buildings, and by reason of the netting in locomotives not being maintained in proper condition. The circular asks that instructions be issued for the purpose of reducing these hazards to a minimum.

*The Destruction of Records.*—The Eastern regional director has drawn attention to the fact that the Division of Public Service and Accounting has ruled that where it is desired to destroy any records which have accumulated during the administration of the director general, it will be proper for the federal manager to appoint some one or two persons to supervise the work as required by the rules of the Interstate Commerce Commission. Where the records to be destroyed accumulated previous to January 1, 1918, the persons to have supervision should be appointed by the corporation.

*Compensation for Sub-Foremen.*—The Eastern regional director has issued the following: The following letter from C. R. Gray, director, Division of Operation, dated Washington, August 15, 1918, is quoted for your information and guidance:

Supplement No. 4 to General Order No. 27 provides that sub-foremen in the mechanical department, such as gang leaders and leading workmen, shall be paid 5 cents per hour more than the craft which they are supervising.

Our attention has been called to the fact that this creates inequalities between certain railroads on account of some of these sub-foremen having been heretofore paid on a monthly basis.

In order to preserve uniformity you may authorize Federal and general managers to place all of these men on an hourly basis.

*Stereopticon Slides for Army in France.*—The Eastern regional director states that the National War Work Council of the Young Men's Christian Association advises that it is experiencing considerable difficulty in securing a sufficient quantity of stereopticon slides for the entertainment of the American Army in France, and asks whether it can borrow the slides heretofore used by the railroad companies for advertising purposes.

There is no objection by the Railroad Administration to such use of the slides in question. In the event that the railroads possess such stereopticon slides they are asked to communicate with the corporation owning them and ascertain if they are willing that the slides be loaned to the Y. M. C. A.

*Rates on Military Impedimenta.*—The regional director of Central Western railroads announces that hereafter third-class freight rates, subject to land grant deductions where applicable, will be applied on military impedimenta, including equipage, subsistence stores, medical stores, emergency ammunition and other property of the United States army, navy or marine corps, other than live stock, accompanying troops, loaded in miscellaneous quantities in mixed carloads, and covered by Government bills-of-lading (without requiring listing or specific packing but simply described as military impedimenta) minimum weight 24,000 lb. These rates, however, will not cover personal baggage or other property of officers or the men which will be handled only under the terms and conditions of current passenger and freight tariffs.

*Semi-Monthly Report.*—The following form shows the style of report which federal managers have been asked to submit on the fifteenth and last day of each month to the Southwestern regional director.

*Improvements.*—List any large improvements in progress, involving an expenditure of \$25,000 or more, in progress of construction and per cent complete with probable date will be ready for service.

*Shop Conditions.*—State if locomotive and car shops are being worked to capacity, and if not, how many additional engines, passenger and freight cars, can be handled for other Federal managers' territories.

State hours worked compared with same period of last year, at principal shops.

*Equipment.*—State generally, condition of locomotives, passenger train cars, freight train cars, and per cent of each class in shop. Also if any maintenance is being deferred account having to keep in service, account heavy traffic, equipment due for shopping. If any surplus of equipment, engines or cars, state what it consists of, and how long it can be spared for use on other territories where needed.

*General.*—Comments on any other items of general interest.

*Railway Express Cars.*—The Southern regional director has instructed railroads in his territory to see that the lettering of cars for the American Railway Express Company is taken care of as soon as possible. In Circular No. 372 he quotes article IV of the agreement between the director general of railroads and the express company reading as follows: "The director general shall furnish adequate and suitable space in cars properly equipped, heated, lighted, and lettered American Railway Express Company for the use of express companies on such passenger, mail and express trains, etc."

*War Tax on Bills Covering Feeding of Live Stock.*—In order No. 40, dated August 16, the regional director of Southwestern railroads announces the findings of the Internal Revenue Bureau of the Treasury Department in a controversy which arose regarding the application of a war tax on bills covering feeding in transit and yardage of live stock at destination. In general the bureau found that if the amount of the feed bill is collected by the carrier, or on its behalf, from the consignee or consignor it is a charge incurred in connection with transportation and is taxable unless the charge is absorbed in the through rate collected by the carrier. If, however, the transportation has been actually completed by delivery of the property to the consignee and the cancellation of the bill-of-lading, the tax should not apply to charges for feeding services rendered subsequently thereto, even though the stock yards where such feeding services are performed is owned and operated by the carrier who transported the live stock.

*Fuel Transportation.*—In Circular No. 17, dated August 13, the regional director of Northwestern railroads emphasizes the necessity of maintaining a full car supply at coal mines. To this end he states that it is imperative that loaded cars suffer no delay in transit or at destination and that coal cars be moved daily. It is suggested that the practice of certain lines operating "mine clean-up" trains of empties daily might be profitably adopted, thereby insuring the regular and current movement of empty cars to the mines. This equipment should be accumulated in train lots and given preferable service if necessary to insure prompt movement to the mines. Transportation departments should permit no slowing up in the movement of coal or mine empties regardless of increased traffic occasioned by the unusually heavy fall business and grain movement.

In Circular No. 118, dated August 16, the regional director of Central Western railroads called attention to carelessness in the unloading of coal cars which in a large number of cases results in equipment leaving the point of unloading containing a ton or more of coal per car. Operating officers and commercial consumers are asked to work for the elimination of this wasteful practice.

*Equipment Used for Troop Trains.*—The Southern regional director has issued instructions looking towards the remedying of complaints that have been made that some of the equipment used for service on troop trains is of considerable age and that the construction is too weak for handling in such trains, which average 13 cars. A survey should be made of the equipment used for the transportation of troops, to determine definitely if any of the cars are in such condition as to render them unfit for service in heavy troop trains, and if it is found that cars being used for troop movements are not in condition to be handled in long trains, they should be withdrawn from troop movement service and used in other line service until they are: (a) Overhauled and strengthened, or (b) Assigned to such service as they are adapted for.

*Proper Instruction of Employees Engaged in Train Operation.*—The Eastern regional director has sent out the following instructions:

Investigation of a recent head-end collision on one of the Eastern railroads, which resulted in the death of several persons and the injury of others, developed that the accident was caused by an error on the part of the operator in re-copying a train order transmitted to him over the telephone despatching circuit. The position as operator was his first employment in that capacity, he had been in the railroad service only about three months, stated that he received only one day's instruction prior to taking the position and had not been furnished with a book of rules relating to his duties.

Will you please bring the facts in this case to the attention of all supervisory officers responsible for the employment of operators and others engaged in train operation, and at the same time caution them as to the necessity of exercising the utmost care in the employment of men for such positions to satisfy themselves fully as to the fitness and ability of the applicants to fulfill the duties and responsibilities involved, to see that they are thoroughly instructed in the rules and regulations governing their duties, supplied with book of rules and other proper written and oral instructions, and are properly examined and passed by the responsible supervising officer as to their understanding of the rules and regulations governing the positions to which they are to be assigned.

*Draft Classification of Skilled Railway Men.*—Provost Marshal General Crowder has sent a message to all draft officials requesting reconsideration of the classification of railway men in Class I. Reconsideration is especially asked in the case of applicants employed as machinists, blacksmiths, boilermakers, tin and coppersmiths, pipefitters and helpers and apprentices of all of the foregoing, hostlers, enginehouse men, train despachters and directors, telegraphers, telephoners, and block operators, locomotive firemen, and helpers, conductors, yard foremen, brakemen, track foremen, telegraph clerks, yard masters and assistants, locomotive engineers and motormen.

Application should be made by the individual and filed with the district board, or the local board for transmission to the district board, asking reconsideration of classification on the ground that the applicant is engaged in a necessary industrial enterprise as a skilled laborer especially fitted for the work in which he is engaged, or as a highly specialized technical or mechanical expert, as the case may be. In case an individual does not wish to make application or it is impracticable for him to do so, application may be made by the federal manager, general manager or other representatives of the Railroad Administration. Applications should be supported by affidavits made by representatives of the Railroad Administration preferably not below the rank of division superintendent.

The affidavits of the railroad officers should state specifically that a discontinuance, serious interruption or materially reduced operation of the railroad would result in substantial material loss and detriment to the effective maintenance of the military establishment and to the adequate and effective operation of military forces—that the railroad contributes materially to all these things and is therefore a necessary industrial enterprise. The applications should include a brief description of the duties of the applicants, indicating why they are essential to the continuous operation of the road. It should also be pointed out that the available supply of persons competent in the same capacity is such that the applicant cannot be replaced without direct material and substantial loss to railroad operation.

*Improving Freight Operations.*—The Northwestern regional director is giving consideration to greater efficiency in yard operation and fuel transportation. In circular No. 16, he has asked the railroads in his territory to consider the following matters:

Complaints from shippers respecting delays to cars indicate the necessity for careful consideration of the following:

1. That the operation of yards be so arranged as to provide as nearly as possible continuous movement of traffic.
2. Where for any reason continuous movement is impossible, cars should be moved in the order of arrival.
3. Most aggravating complaints arise from delay to individual cars for which no reasonable or satisfactory explanation can be offered. This is particularly true at a season of the year when yards are free from congestion.
4. It is the duty of operating organizations to know that the work is so arranged in all yards as to avoid unusual delays. Reports made by inspectors show that on many lines there has not been provided a system that insures unfailing attention to all loaded cars that for any reason fall out of the regular current of movement, including no bills, cars improperly billed, cars held for disposition or reconsignment, company material, and cars in bad order, including the repair of loaded cars in preference.
5. A careful study should be made of the organization and facilities at all important yards and terminals to insure a proper and efficient method.
  - (a) as to proper organization of force,
  - (b) assignment of individual responsibility of duties,
  - (c) supervision of office and yard operations,
  - (d) working facilities of yards and power,
  - (e) yard office facilities.
6. It is suggested that with the curtailed activities of traffic department some of the various employees, formerly acting as traveling agents, might, with profit, be put in charge of yard office organizations at some of the larger terminals or assigned to special duties in connection therewith.
7. With efficiently organized force should follow a very careful study to determine a possibility of further extension of solid train load movement to avoid switching enroute. This plan is now in effect from the larger terminals to the seaboard, and the average miles per car per day made by these solid trains handling full tonnage, is the best indication of the importance of extending this practice wherever possible. Where there is not sufficient tonnage available, loads for common points should be assembled together to facilitate train lot consolidations at other points.
8. Delays in yards and congestions are frequently caused by failure of agents to observe embargoes. No valid excuse exists for this if clear instructions are in the hands of every agent as to embargoes in effect. Prompt report should be made to this office of any accumulation of cars occasioned by loading prior to issuance of embargoes with details as to car numbers and full billing reference.

The larger part of the transportation troubles of the railroads arise from improper conditions in the terminals, and if you will provide a proper organization and direct them on the lines outlined above with such further directions as your experience no doubt will dictate, it will bring surprising results.

May I not ask that all officers responsible for terminal and yard operation on your line be especially directed and instructed to give these matters their very closest attention and may I further ask that you have experienced men especially detailed to check up the operation of these yards to the end that the Railroad Administration may get the most efficient operation possible out of their operation, and that you advise me of action you have taken.

In circular No. 17, confirming telegraphic advices, he has emphasized the necessity for prompt movement of empty and loaded coal cars, as follows:

To insure full car supply at coal mines, it is imperative that:

1. Loaded cars must not be delayed in transit or at destination;
2. Coal empties must be moved daily;
3. It is suggested the practice of certain lines operating mine empty cleanup trains daily might be profitably adopted, thereby insuring regular and current movement of empties to mines.
4. Accumulate in train lots and give preferential service, if necessary, to insure current movement to mines.
5. Impress transportation department forcibly there must be no slowing up in movement of coal or mine empties regardless of increased traffic occasioned by usual heavy fall business and grain movement.

*Handling Passing Reports.*—A Reconsigning and Diversion Bureau, in charge of J. B. Crawford, Room 402, No. 58 East Washington Street, Chicago, Ill., has been established for the purpose of providing facilities for the transmission of information to shippers and receivers and, ultimately, for the handling of reconsignments and diversions of fruits and vegetables moving from the West to Eastern destinations. Agencies of the bureau will be established at Buffalo, Boston, Cleveland, Cincinnati, Detroit, Indianapolis, Pittsburgh and New York.

Telegraphic passing reports of cars destined to the following points will be communicated to shippers and receivers as outlined below:

| Destination             | Passing at           | Shipments routed |
|-------------------------|----------------------|------------------|
| Detroit, Mich. ....     | Chicago, ....        | All Lines        |
| Buffalo, N. Y. ....     | Chicago, ....        | All Lines        |
| Cleveland, Ohio ....    | Chicago, ....        | All Lines        |
| Cincinnati, Ohio ....   | Chicago, ....        | All Lines        |
| Indianapolis, Ind. .... | Chicago, ....        | All Lines        |
| Pittsburgh, Pa. ....    | Chicago, ....        | All Lines        |
| Boston, Mass. ....      | Chicago-Buffalo .... | Via Buffalo*     |
| Boston, Mass. ....      | Chicago-Hornell .... | Erie-D&H-B&M     |
| New York ....           | Chicago-Hornell .... | Erie RR.         |

Reports will be transmitted to other points as conditions warrant.

Consolidated mail reports, showing departure of all cars from Chicago, will be sent agents of the bureau at the above points in order to provide record on cars diverted after departure from Chicago.

The bureau for the present will confine this service for the transmission of information on cars moving eastbound through Chicago. The handling of diversions or reconsignments will be taken over in the near future, as soon as arrangements can be perfected.



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With the American Troops in France

## General News Department

The National Safety Council will hold its annual meeting at the Hotel Statler, St. Louis, Mo., from September 16 to 20 inclusive.

The Grand Trunk freight house at Ottawa, Ont., was destroyed by fire on August 15, together with 28 loaded freight cars; estimated loss, \$90,000. The fire was started by an explosion in a freight car.

Employees of the Long Island Railroad have raised money to present a Red Cross ambulance to the government, and are now contributing a fund for a second ambulance—about \$4,900 in all. No employee or officer gives more than one dollar.

The sailing-day plan for freight shipments has recently been introduced at over 100 stations in the Northwestern region. It is expected that it will be inaugurated in the Chicago switching district for the roads in the Northwestern region, about September 1.

The issuance of passes by railroads operated by the government will be continued as usual, pending further orders, all passes to be issued by the federal manager, or where there is no federal manager, by the general manager; but annual passes for officers connected directly with the director general and his staff, or the regional or district directors and their staffs, will be issued by the office of the director general.

Women continue to replace men in new occupations in railway work from week to week. The Department of Labor recently drew attention to the fact that women have been successfully employed in railroad tank painting, and noted that one of the many unusual calls received at the various local offices of the Federal Employment Service recently was one from an eastern railroad for six baggage porters, which was promptly met.

The Shopmen of the Louisville & Nashville have been "organized," and, according to a Louisville paper, about 97 per cent of the several thousand men in the different shops of the road have joined unions representing their several crafts. The men will work under what is called the Southeast agreement, and papers were signed on August 15 by the superintendent of machinery, representing the road, and by leaders of the several crafts. The federated shop crafts include the machinists, the blacksmiths, the boilermakers, the sheet metal workers, the electrical workers, and the carmen.

The Chicago City Council, through its committee on local industries, threatens to sue the Illinois Central to recover for the city the value of lands which, it alleges, the railroad is occupying without authority. The land in question consists of street ends occupied by tracks and warehouses north of Randolph street. The law, according to the chairman of the committee, provides that when shore owners make land they must keep existing streets open to the lake. The Illinois Central, however, has not kept Lake and South Water streets open to the lake but has closed them at Beaubien court. The committee estimates the value of the land involved at about \$10,000,000. Officers of the Illinois Central say that the property in question has been occupied by the railway for 66 years.

Priority Certificates cannot be bought, and it is useless to employ agents to obtain certificates or to use their influence in getting favorable decisions from the War Industries Board. This is the gist of a statement which has been issued by E. B. Parker, Priorities Commissioner. He says that his attention has been called to the fact that certain individuals are offering their services and soliciting employment to present priority applications and procure the issuance of priority certificates. The rules and regulations of the Priorities Division are clear, and will be furnished to

anyone applying therefor. The employment of agents burdens the applicant with a wholly unnecessary expense, and an attempt on the part of agents to exert personal influence may have a tendency to prejudice the applicant's cause.

The proposed new passenger station of the New York Central at 149th street, New York City (Mott Haven junction), planned more than two years ago but never begun, is the subject of a communication from the Public Service Commission of the State to the Railroad Administration looking to a hastening of the work. The recent changes in the routes of subway trains in New York have caused congestion of passenger traffic at a number of places and the Commission is seeking ways of meeting this difficulty. It was expected that the station would be begun in 1916. It would provide facilities for turning back New York Central and New Haven suburban trains at 149th street, as passengers could be discharged there and be taken to the business district by both the east side and the west side subways, thus eliminating congestion at the Grand Central station. The New York Central has made some preliminary expenditures for this station, several thousand dollars having been spent in the construction of passageways from the subway station to what eventually will be the concourse of the new railroad station.

### Bonus to Santa Fe Soldiers Promoted

Every officer or employee of the Atchison, Topeka & Santa Fe who wins a commission while in foreign military or naval service will receive \$200 from the Santa Fe Foreign Service Fund to defray the cost of his equipment as an officer. Sometimes a man declines a commission owing to the expense involved in its acceptance. The Santa Fe people hope by removing this factor to spur every man in the ranks to greater efforts to get his bars. This fund is being collected by the Santa Fe Magazine and now aggregates over \$3,500.

### Five Cents More for Coal Delivered to Engine Tenders

Under an order of the Fuel Administration, effective August 17, there may be added to the government mine price of coal delivered directly from mine tipples to locomotive tenders the sum of five cents a net ton, or such other sum as may be agreed upon between the operator and the railroad receiving the coal. In case of failure to agree the operator shall furnish such coal at the government mine price, plus such additional sum as may be fixed by the Bureau of Prices of the Fuel Administration.

### Meeting to Discuss Fuel Economy in Stationary Plants

A meeting has been called by Eugene McAuliffe, manager Fuel Conservation Section, Division of Operation, United States Railroad Administration, of one delegate from each railroad operating 500 or more miles of line for the purpose of discussing fuel conservation in stationary plants. The meeting is to be held at the Dearborn Hotel, Chicago, at 9:30 a. m., on Monday, September 9. The delegates are to be selected with regard to their direct responsibility for fuel consumption other than locomotives. The mechanical engineering staff of the United States Fuel Administration, Department of Conservation, headed by David Moffet Myers, will attend the meeting, and deliver a series of short, concise addresses on the proper maintenance and operation of stationary plants. There is a great opportunity of saving fuel along these lines. In 1918 the railroads consumed in this manner approximately 16 million tons of coal costing about \$56,000,000. The meeting will last only one day and is held a day before the Traveling Engineers' Association convenes in order that the men attending may have an opportunity to attend that convention.

## REVENUES AND EXPENSES OF RAILWAYS

Month of June, 1918

| Name of road.                                 | Average mileage operated during period. |            |              | Operating revenues—                |                  |           |                |            |            | Operating expenses— |            |            | Net from railway operation. | Railway tax accruals. | Operating income (or loss). | Increase (or decr.) comp. with last year. |          |
|---|---|------------|--------------|------------------------------------|------------------|-----------|----------------|------------|------------|---------------------|------------|------------|-----------------------------|-----------------------|-----------------------------|---|----------|
|   | Freight.                                | Pasenger.  | (inc. misc.) | Maintenance of Way and structures. | Total equipment. | Traffic.  | Transporation. | General.   | Total.     | Operating ratio.    |            |            |                             |                       |                             |   |          |
| Atlantic & St. Louis.....                     | \$150,500                               | \$23,360   | \$197,384    | \$15,071                           | \$63,386         | \$3,644   | \$135,631      | \$7,923    | \$255,657  | 129.52              | \$58,273   | \$11,346   | \$69,644                    | -\$8,205              |                             |   |          |
| Central New England.....                      | 301                                     | 1,634,386  | 484,594      | 131,444                            | 1,512,660        | 1,511,617 | 1,494,022      | 1,493,467  | 2,688,123  | 145.97              | 240,669    | 17,800     | 222,780                     | -240,669              | -450,850                    |   |          |
| Chicago & East Illinois.....                  | 1,131                                   | 2,202,990  | 357,963      | 719,617                            | 2,190,709        | 2,190,709 | 2,190,709      | 2,190,709  | 3,502,221  | 145.97              | 314,277    | 114.26     | 79,592                      | 394,294               | 746,451                     |   |          |
| Chicago, Det. & Can. Grand Trunk Jct.         | 60                                      | 110,500    | 8,200        | 165,436                            | 173,556          | 173,556   | 173,556        | 173,556    | 1,293,060  | 111.55              | 2,067      | 100.79     | 1,667,750                   | 151.04                | 6,678                       | -25,691                                   |          |
| Chicago Junction.....                         | 12                                      | .....      | .....        | 40,523                             | 40,523           | 40,523    | 40,523         | 40,523     | 316,223    | 111.55              | 2,067      | 100.79     | 1,667,750                   | 151.04                | 6,678                       | -153,428                                  |          |
| Delaware & Hudson.....                        | 2,550,429                               | 239,301    | 2,945,283    | 359,856                            | 1,001,640        | 24,835    | 1,921,051      | 124,556    | 3,450,561  | 117.15              | 505,179    | 79,181     | 5,000                       | 184,360               | -1,318,488                  |   |          |
| Detroit, Grand Haven & Milwaukee.....         | 190                                     | 230,000    | 31,000       | 265,944                            | 56,635           | 4,658     | 253,883        | 9,136      | 391,964    | 147.35              | 116,020    | 3,444      | 820,096                     | 161,471               | -981,801                    | -142,051                                  |          |
| Detroit, Toledo & Ironton.....                | 441                                     | 210,927    | 12,324       | 238,880                            | 75,397           | 138,111   | 7,840          | 18,088     | 238,882    | 181.20              | 193,972    | 8,500      | 202,472                     | 62,103                | -46,280                     | -220,645                                  |          |
| Grand Trunk West.....                         | 347                                     | 867,000    | 135,000      | 1,051,756                          | 158,044          | 266,402   | 17,446         | 597,104    | 30,346     | 1,074,433           | 102.12     | -22,697    | 37,649                      | 14,000                | -60,346                     | -291,361                                  |          |
| Inter. & Great Northern.....                  | 1,159                                   | 540,451    | 377,867      | 967,635                            | 233,415          | 324,087   | 26,532         | 690,862    | 63,346     | 1,327,714           | 137.21     | -360,080   | 30,000                      | -390,376              | -694,789                    |   |          |
| Kan. City, Mex. & Orient of Tex.....          | 465                                     | 64,515     | 12,303       | 81,944                             | 14,072           | 38,641    | 1,819          | 36,916     | 9,391      | 116.37              | 505,179    | 5,000      | -18,419                     | 5,000                 | -1,318,488                  |   |          |
| Lake Michigan & Western.....                  | 1,168                                   | 725,939    | 316,053      | 1,182,760                          | 179,926          | 296,536   | 25,727         | 590,099    | 41,238     | 1,166,767           | 98.65      | 15,993     | 62,103                      | 161,471               | -981,801                    | -142,051                                  |          |
| Los Angeles & Salt Lake.....                  | 302                                     | 90,457     | 12,057       | 120,636                            | 127,065          | 28,444    | 4,976          | 73,180     | 8,108      | 143,364             | 112.82     | -16,299    | 11,408                      | 14,000                | -27,716                     | -60,028                                   |          |
| Long Ry. & Nav. Co.....                       | 356                                     | 129,011    | 155,900      | 197,607                            | 55,564           | 6,288     | 14,940         | 12,073     | 252,233    | 127.64              | -59,656    | 14,000     | -73,689                     | 14,000                | -89,229                     |   |          |
| Louisiana & Nash.....                         | 4,996                                   | 5,011,279  | 2,177,929    | 7,610,037                          | 2,009,968        | 2,009,275 | 173,046        | 4,524,270  | 119,027    | 8,233,315           | 108.19     | -622,278   | 237,978                     | -861,999              | -2,310,932                  |   |          |
| Maine Central.....                            | 1,216                                   | 849,498    | 374,941      | 1,344,404                          | 265,111          | 280,833   | 35,414         | 1,162,552  | 1,807,180  | 134.72              | 465,777    | 73,172     | 62,103                      | 73,172                | 19,392                      | -881,801                                  | -142,051 |
| Midland Valley.....                           | 386                                     | 191,395    | 56,129       | 257,066                            | 32,227           | 56,816    | 8,405          | 3,548      | 1,866      | 183,893             | 97.26      | 2,482      | 7,101                       | 66,048                | 23,395                      | -565,853                                  |          |
| Mineral Range.....                            | 100                                     | 86,444     | 22,227       | 90,816                             | 26,147           | 16,230    | 4,722          | 43,634     | 8,834      | 92,448              | 8,413      | 8,413      | 3,869                       | 14,000                | -1,387                      | 9,461                                     |          |
| Missouri & North Ark.....                     | 365                                     | 60,620     | 41,759       | 111,975                            | 27,402           | 21,154    | 2,251          | 46,975     | 5,803      | 103,551             | 5,610      | 5,610      | 2,348                       | 14,000                | -6,168                      |   |          |
| Montana Connecting.....                       | 5                                       | 390,333    | 161,555      | 593,532                            | 69,310           | 75,766    | 7,826          | 22,593     | 44,956     | 93,155              | 108.77     | -118,117   | 2,433                       | -20,551               | -34,466                     |   |          |
| Morgan's La. & Tex. R. R. & S. S. Co.         | 400                                     | 130,486    | 15,151       | 130,668                            | 13,437           | 16,755    | 2,726          | 15,645,617 | 892,067    | 27,674,066          | 109.77     | -653,801   | 54,862                      | 25,910                | 28,604                      | -166,633                                  |          |
| New York Central.....                         | 168                                     | 20,522     | 3,390,620    | 3,390,620                          | 3,390,620        | 3,390,620 | 3,390,620      | 3,390,620  | 3,390,620  | 3,390,620           | 94.53      | 91,608     | 19,392                      | 282,000               | -926,360                    | -31,356                                   |          |
| Newburgh & South Shore.....                   | 6,079                                   | 14,530,315 | 6,162,498    | 23,874,669                         | 3,954,318        | 27,641    | 15,645,617     | 892,067    | 27,674,066 | 155.91              | -3,799,367 | 11,103,489 | 20,235                      | 1,108,660             | -32,893                     |   |          |
| New York, Penn. & W. Va. Central.....         | 121                                     | 467,833    | 112,968      | 627,729                            | 81,084           | 126,692   | 14,262         | 15,655     | 63,953     | 101.07              | -6,824     | 24,535     | -23,355                     | -207,393              |                             |   |          |
| New York, Phila. & Norf. & W. Va. & N. S. Co. | 2,080                                   | 5,483,927  | 1,030,066    | 6,726,527                          | 1,152,141        | 2,627,934 | 72,142         | 3,334,899  | 183,408    | 538,20              | 109.72     | -653,801   | 272,000                     | 282,000               | -926,360                    |   |          |
| Norfolk & Western.....                        | 2,007                                   | 4,308,620  | 3,390,620    | 8,722,413                          | 1,441,046        | 3,161,550 | 53,039         | 5,597,075  | 40,957     | 10,829,517          | 124.08     | -2,102,104 | 2,070,104                   | -4,204,726            |                             |   |          |
| N.Y. N. H. & Hartford.....                    | 2,065                                   | 1,366,018  | 699,614      | 2,332,716                          | 368,898          | 339,078   | 40,957         | 1,159,231  | 112,913    | 2,070,404           | 88,75      | 262,332    | 123,977                     | 138,295               | -564,064                    |   |          |
| Ore-Wash. R. R. & Nav. Co.                    | 5,334                                   | 19,047,394 | 8,700,334    | 30,537,988                         | 4,799,179        | 9,548,643 | 334,848        | 20,888,636 | 871,067    | 36,979,683          | 121.09     | -6,441,695 | 874,585                     | -7,318,533            | -12,707,527                 |   |          |
| Pennsylvania Company.....                     | 1,754                                   | 5,662,151  | 1,550,238    | 8,038,828                          | 1,307,620        | 2,424,078 | 107,731        | 5,025,490  | 228,678    | 9,170,695           | 114.08     | -1,131,867 | 291,908                     | -1,423,781            | 3,542,715                   |   |          |
| Philippines, Reading & Chicago.....           | 1,126                                   | 5,80,833   | 4,667,975    | 1,819,308                          | 7,322,226        | 1,080,376 | 1,676,715      | 57,761     | 1,432,324  | 105.15              | -36,694    | 135,583    | 2,487,741                   | 2,487,741             |                             |   |          |
| Pitts., Cinn. & Chicago & St. Louis.....      | 2,398                                   | 8,155,338  | 3,440,547    | 12,713,124                         | 1,499,989        | 4,064,641 | 2,726,226      | 4,630,260  | 4,746,131  | 402,303             | 13,874,861 | 211,14     | -1,548,303                  | 235,766               | -1,784,266                  |   |          |
| Pitts., Shawmut & Northern.....               | 204                                     | 10,184,644 | 4,309        | 18,027                             | 34,153           | 60,544    | 1,110          | 66,409     | 10,040     | 172,556             | 159,01     | -63,929    | 1,818                       | -65,746               | -38,070                     |   |          |
| Port Reading.....                             | 21                                      | 182,898    | 24,870       | 24,870                             | 78,181           | 120,43    | 274            | 21,046     | 27,185     | 88,85               | 27,185     | 10,000     | 17,285                      | 17,285                | -19,739                     |   |          |
| St. Louis-San Fran. & Tex.....                | 134                                     | 70,503     | 17,497       | 91,150                             | 118,956          | 14,351    | 2,917          | 60,299     | 9,442      | 103,459             | 113.52     | -12,319    | 1,648                       | -13,967               | -8,274                      |   |          |
| South Buffalo.....                            | 35                                      | 8,155,338  | 3,440,547    | 10,812,125                         | 255,554          | 56,922    | 4,861          | 1,636,662  | 1,740,662  | 1,432,324           | 109.13     | -1,161,737 | 591,399                     | 1,755,592             | 6,315,076                   |   |          |
| Southern Pacific Central.....                 | 7,103                                   | 1,327,331  | 1,081,083    | 2,323,780                          | 1,955,360        | 391,603   | 517,203        | 11,911     | 28,061     | 11,911              | -28,061    | 54,429     | 1,870,352                   | 33,250                | -54,076                     |   |          |
| Tennessee & Pacific.....                      | 1,946                                   | 1,105,282  | 1,105,282    | 1,105,282                          | 1,105,282        | 1,105,282 | 31,670         | 1,281,672  | 80,265     | 2,325,948           | 119,03     | -37,988    | 87,019                      | -460,273              | -1,008,741                  |   |          |
| Texas & Pacific.....                          | 359                                     | 267,400    | 591,392      | 918,441                            | 259,656          | 198,571   | 9,988          | 580,552    | 25,199     | 1,078,666           | 117.44     | -160,204   | 41,077                      | -201,302              | -339,605                    |   |          |
| Utah Ry., Shreve, & Pac.....                  | 98                                      | 103,669    | 59,797       | 105,067                            | 155,156          | 33,332    | 9,700          | 17,733     | 175        | 25,525              | 53,378     | 50,80      | 51,690                      | 3,417                 | 48,272                      |   |          |
| Washington Southern.....                      | 171                                     | 131,905    | 131,544      | 181,083                            | 336,386          | 17,866    | 35,324         | 3,052      | 11,188     | 7,908               | 222,208    | 142,88     | 67,678                      | -76,789               | -107,504                    |   |          |
| West Jersey & Seashore.....                   | 35                                      | 267,400    | 591,392      | 918,441                            | 259,656          | 198,571   | 9,988          | 580,552    | 25,199     | 1,078,666           | 117.44     | -160,204   | 41,077                      | -201,302              | -339,605                    |   |          |
| Six Months of Calendar Year, 1918             |   |            |              |                                    |                  |           |                |            |            |                     |            |            |                             |                       |                             |   |          |
| Atlantic & St. Louis.....                     | 166                                     | 773,460    | 127,948      | 986,123                            | 169,200          | 265,154   | 20,852         | 840,930    | 36,865     | 1,336,601           | 135.48     | -349,868   | 68,076                      | -417,969              | -87,418                     |   |          |
| Central & East Illinois.....                  | 1,311                                   | 2,419,358  | 1,666,022    | 3,064,213                          | 2,688,123        | 1,502,221 | 477,103        | 7,886      | 1,452,312  | 48,373              | 2,496,465  | 92,86      | 191,703                     | 106,800               | 84,745                      |   |          |
| Chicago, Det. & Can. Grand Trunk Jct.         | 60                                      | 441        | 889,669      | 57,822                             | 1,044,436        | 252,647   | 1,493,467      | 1,521,324  | 1,521,324  | 344,241             | 1,521,324  | 95,47      | 509,663                     | 462,798               | 43,602                      |   |          |
| Chicago Junction.....                         | 12                                      | 347        | 3,765,000    | 765,000                            | 4,880,801        | 672,337   | 1,405,842      | 101,808    | 2,525,609  | 13,037              | 670,971    | 105.27     | -33,601                     | 20,070                | -665,667                    |   |          |
| Delaware & Hudson.....                        | 878                                     | 13,088,020 | 1,226,373    | 15,125,206                         | 1,612,265        | 4,234,192 | 1,972,781      | 4,234,192  | 4,234,192  | 1,577,452           | 1,577,452  | 105.27     | 533,041                     | 223,770               | -223,770                    |   |          |
| Detroit, Grand Haven & Milwaukee.....         | 190                                     | 1,059,000  | 211,000      | 1,493,467                          | 197,789          | 312,328   | 1,063,731      | 1,063,731  | 1,063,731  | 1,577,452           | 1,577,452  | 105.27     | 53,601                      | 225,894               | -225,894                    |   |          |
| Detroit, Toledo & Ironton.....                | 441                                     | 889,669    | 57,822       | 1,044,436                          | 252,647          | 24,742    | 785,045        | 1,405      |            |                     |            |            |                             |                       |                             |   |          |

### Conservation of Freight Cars

The number of freight cars saved on the Southern Pacific (Pacific System) by economy in loading during the six months ending June 30, 1918, was 48,951. During the six months the tonnage loaded totaled 9,783,635 tons of commercial freight compared with 9,537,062 tons for a corresponding period in 1917, an increase of 246,573 tons. Total cars loaded, 368,609, compared with 406,852 cars for a like period in 1917; an increased volume of 246,573 tons was accommodated with a reduction of 38,243 cars. The heaviest average car loading was accomplished on the Shasta Division with a percentage of load to capacity of 83.5.

### Frauds in Priority of Lumber Shipments

In the United States District Court at Newark, N. J., eight lumber dealers have been indicted for violation of the Interstate Commerce law in avoiding freight embargoes by shipping lumber to an officer of the army without having authority from anybody connected with the government to do so. The offenses occurred in the latter part of 1917, and the early part of 1918. The investigations were made by the district attorney for New Jersey, the Investigation Bureau of the Department of Justice, and special agents of the Interstate Commerce Commission. The indictments charge the companies and their officers with procuring illegal discrimination by which they were able to sell lumber while others could not sell, and also were able to get a higher price from the government. The defendants are the Metropolitan Lumber Company, and Jacob Jacobson; the Southern Lumber Company, and David Jacobson, all of Newark, N. J.; Heidritter Lumber Company, and Frank R. Wallace, of Elizabeth, N. J.; Franklin Lumber Company of Newark; Coastwise Lumber & Supply Company of Jersey City; Boynton Lumber Company of Seawaren, N. J.; Ira R. Crouse of Perth Amboy, N. J., and Perrine & Buckelew, Inc., of Jamesburg, N. J.

Following the investigation of these cases, the director general of railroads issued his order No. 38, noticed in the *Railway Age*, August 2, page 221, regulating the marking of freight for the government.

### Railway Earnings in 1917 and 1916

The following table showing railway earnings in the calendar year ended December 31, 1917, as compared with 1916, is one compiled by the Bureau of Railway Economics and includes those roads with annual operating revenues above \$1,000,000. The figures as given are not final, as one road is missing, but the total mileage represented is 233,445.

The figures show that the total operating revenues in 1917 were \$4,011,380,041, an increase over 1916 of about \$419,030,349. Operating expenses, however, showed an increase of \$471,866,542, leaving a net operating revenue of \$1,184,243,291, a decrease of \$52,836,193.

| RAILWAY INCOME ACCOUNT, 1917 AND 1916                             |                 |                 |                            |
|---|-----------------|-----------------|----------------------------|
| Account   | 1917            | 1916            | Increase 1917<br>over 1916 |
| Operating revenues .....  | \$4,011,380,041 | \$3,592,349,692 | \$419,030,349              |
| Operating expenses .....  | 2,827,136,750   | 2,355,270,208   | 471,866,542                |
| Net operating revenue... \$1,184,243,291                          | \$1,237,079,484 | d \$52,836,193  |                            |
| Tax accruals ..... 213,882,232                                    | 156,869,925     | 57,012,307      |                            |
| Uncollectible revenue ..... 698,723                               | 821,750         | d 123,027       |                            |
| Misc. operating income..... 9,983,157                             | 2,889,286       | 7,093,871       |                            |
| Total operating income.. \$979,545,493                            | \$1,082,277,095 | d \$102,731,602 |                            |
| Net rentals—balance* Dr. 36,258,338                               | Dr. 42,033,737  | 5,775,399       |                            |
| Net operating income**.. \$943,287,155                            | \$1,042,243,358 | d \$98,956,203  |                            |
| Non-operating income .....  | 216,154,708     | 203,663,492     | 12,491,216                 |
| Gross income .....  | \$1,159,441,863 | \$1,243,906,850 | d \$84,464,987             |
| Deductions:   |                 |                 |                            |
| Interest on funded debt... \$404,313,381                          | \$406,430,990   | d \$2,117,609   |                            |
| Interest on unfunded debt.. 13,632,435                            | 13,822,524      | d 190,089       |                            |
| All other deductions..... 153,416,412                             | 180,031,859     | d 26,615,447    |                            |
| Total deductions .....  | \$571,362,228   | \$600,285,373   | d \$28,927,145             |
| Net income ..... 588,079,635                                      | 643,621,477     | d 55,541,842    |                            |
| Disposition of net income:  |                 |                 |                            |
| Dividend appropriations ... \$222,378,713                         | \$175,107,298   | \$47,271,415    |                            |
| Appropriations for investment in physical property.... 45,419,690 | 61,704,005      | d 16,284,315    |                            |
| Other appropriations .....  | 25,582,319      | 47,892,604      | d 22,310,285               |
| Total appropriations .... \$293,380,722                           | \$284,703,907   | \$8,676,815     |                            |
| Balance to profit and loss... 294,698,913                         | 358,917,570     | d 64,218,657    |                            |

\* Hire of equipment and joint facility rents.

\*\* Corresponds to "standard return" of the railway control act.

d Decrease.

### Traffic News

The Railroad Administration has put in effect new rates on manganese ore much lower than the prevailing rates carried in current tariffs.

Preferred handling of threshing machine repair parts has been established by express companies at the request of the Food Administration. Delays in transit have caused losses of grain due to remaining too long in the field.

The Cape Cod Canal is to be deepened from 17 feet to 23 feet, dredging having been ordered by the government to accomplish this deepening at the three points where the depth is at present insufficient. With the greater depth it will be possible to move through the canal the coal—about ten million tons annually—now carried to New England by water around Cape Cod. James H. Hustis, district director of railroads for New England, announces that Captain A. L. Crowley has been appointed general agent for the canal, with office at 148 State street, Boston. Three tugs have been engaged to tow sailing vessels through the canal.

The rules of the Interstate Commerce Commission relative to the publication and filing of tariffs, as shown in its circular 18-A, continues in force notwithstanding orders of the Railroad Administration, except as may be expressly called for in such orders. Instructions to this effect have been issued by Edward Chambers, director of traffic, Railroad Administration, in circular No. 4, instances having arisen where the I. C. C. rules were not properly complied with. A suspended schedule must not be cancelled nor any change made in a rate or provision that is held in effect by virtue of a suspension order, except by special permission of the Interstate Commerce Commission.

### Travelers' Aid Society

The Travelers' Aid Society assisted during 1917 about 750,000 persons, and expects this year to make a record of 2,000,000. There are now 175 organizations doing such work throughout the United States, and reports received from only 75 of these for the first six months of 1918 show a total of 342,124 persons assisted. The society has in the past devoted its efforts largely to furnishing moral protection to travelers, especially women and girls who are unaccompanied, but since the beginning of the war the society has found it necessary to broaden its activities to include munitions centres and war camps.

### Coal Production

During the week ended August 10 the production of bituminous coal not only decreased 278,000 net tons, or 2.2 per cent, but recorded the fourth successive week of decreased production, says the weekly bulletin of the United States Geological Survey. The decrease in production during this period was equivalent to 1,000,000 net tons or 7.6 per cent below the record week of July 13, when production reached 13,286,000 net tons, and makes necessary an output of 14,500,000 net tons during the balance of the summer months to make up the deficit for the coal year to date.

The output during the week of August 10, including lignite and coal made into coke, is estimated at 12,274,000 net tons, as against 12,552,000 net tons during the week of August 3 and 10,636,000 net tons during the current week of 1917. The average production per working day during the week of August 10 is estimated at 2,046,000 net tons as compared with 2,092,000 net tons during the week preceding and 1,773,000 net tons during the week of August 10, 1917. The daily average during the current week fell 54,000 net tons or 2.6 per cent behind the daily summer requirements established by the United States Fuel Administration.

Anthracite production during the week of August 10 is estimated at 2,051,933 net tons, a decrease compared with the week preceding of 6.4 per cent. Shipments during the

same week totaled 36,870 carloads, decreasing 7 per cent. Total production during the coal year to date is estimated at 37,709,447 net tons, an increase over the same period of last year of 2.1 per cent.

The percentage of full time output lost on account of car shortage during the week ending August 3 was 7.5, representing the fourth successive increase in that number of weeks.

### Anthracite Coal Shipments

Anthracite coal shipments in July amounted to 7,084,775 gross tons, against 6,867,669 tons in June, and 6,724,252 tons in July of last year. The July shipments were the largest ever made in that month, and have been exceeded only twice—in March of this year, and in October, 1917. The shipments for the first four months of the present coal year (April to July, inclusive) amounted to 27,208,073 tons, against 26,283,113 tons for the same period of 1917, an increase of 924,960 tons. The July returns show a substantial increase in the output of domestic sizes, which in the earlier months of the year had shown a relative decline. The figures by railroads for July are as follows:

|                                     | July      |           |
|-------------------------------------|-----------|-----------|
|                                     | 1918      | 1917      |
| Philadelphia & Reading.....         | 1,420,624 | 1,256,316 |
| Lehigh Valley .....                 | 1,319,731 | 1,254,647 |
| Central of New Jersey.....          | 641,547   | 603,704   |
| Delaware, Lackawanna & Western..... | 1,034,561 | 1,052,944 |
| Delaware & Hudson.....              | 820,530   | 758,695   |
| Pennsylvania .....                  | 504,630   | 510,941   |
| Erie .....                          | 824,242   | 768,245   |
| New York, Ontario & Western.....    | 167,656   | 168,915   |
| Lehigh & New England.....           | 351,254   | 349,845   |
| Totals .....                        | 7,084,775 | 6,724,252 |

### The National Industrial Traffic League

The National Industrial Traffic League, G. M. Freer, Cincinnati, president, will hold its summer meeting at the Hotel Lafayette, Buffalo, N. Y., on Thursday and Friday, August 29 and 30. The report of the executive committee contains seven principal subjects: Shippers' Representation on Freight Traffic Committees; Instructions of the Car Service Section on Double Loading; Establishment of Bureaus to Take the Place of Off-Line Offices; Keeping Records of l. c. l. shipments at Junctions; the New Rules for Payment of Freight Charges; the Recent Advance in Freight Rates; the Policy of the Post Office Department in Adjusting Damage Claims.

Other subjects on the docket are the following: Demurrage Rule 6, Section D, Proposed Modification; Demurrage Rule 4, and the Sending of Freight Arrival Notices by First-Class Mail; Proposed Restoration of the Average Agreement Rule; New Requirements on Bills of Lading; Express Companies' Rates, Proposed Change in Packing Rules, and other matters connected with express traffic; Sale of Unclaimed Freight Without Notification to the Shipper; Carriers' Refusal to Pay Concealed Loss and Damage Claims, and other matters connected with freight claims; Report of Classification Committee; Report on sidetrack agreements.

### The Port of New York

William R. Willcox, chairman of the New York-New Jersey Port and Harbor Development Commission, commenting on erroneous statements concerning the congestion of freight at New York harbor last winter, says that the capacity of the port for the handling of freight, whether inbound or outbound, equals several times the demands made upon the port, even the present extraordinary war demands. Mr. Willcox calls attention to the fact that the port of New York has a waterfront of 770 miles, of which a length of 320 miles has been developed.

This commission, which, for the current year, has an appropriation of \$200,000, one-half from New Jersey and one-half from New York, is conducting extensive investigations preliminary to the making of a comprehensive report on the capacity and needs of the port. The commission is co-operating with the United States Shipping Board, which is investigating

all the ports of the country, and also with the Fuel and the Railroad Administrations. The investigations of the commission are made under the direction of B. F. Cresson, Jr., consulting engineer, whose office is at 14 John street, New York City. Men will be sent into the field to make minute studies of the railroad service, the steamship and lighterage services, and also the business of trucking in the streets.

A force of 25 observers is already at work investigating railroad freight stations, a twenty-four-hour inspection being made at each point. These same men will probably be employed to investigate the operations of drays. Other investigators will examine the records of the railroads, and surveyors are to locate an exterior belt line for a railroad in New Jersey. Studies will be made of the 400 warehouses in the Metropolitan district, and all necessary data will be gathered in regard to markets and food distribution. The barge canal and all other facilities and institutions connected with New York City's commerce will be reported on in detail.

### Metamorphosis of Traffic Associations

The Western Passenger Association, the Trans-Continental Passenger Association and the Southwestern Passenger Association, with their auxiliary bureaus, have been abolished, and their activities are to be assumed by the Western Passenger Traffic Committee, with the following organizations: (a) Western Passenger Bureau, with Eben E. MacLeod, formerly chairman of the Western Passenger Association, as manager, and J. E. Hannegan, formerly chairman of the Southwestern Passenger Association, as assistant manager, with headquarters in the Transportation building, Chicago; (b) Bureau of Service of National Parks and Monuments, the establishment of which was announced in the *Railway Age* August 9. The passenger bureau will consist of a tariff division, a clergy permit division and a military division. Mr. Hannegan, who is in charge of the tariff division, is now in conference with the rate clerks of the Western roads, to work out permanent tariffs to take the place of the temporary tariffs which were prepared early in the summer.

### Hearings on Proposed Consolidated Classification

Hearings on the proposed consolidated freight classification No. 1 were held at Boston, Mass., on August 1 and 2, before Examiner Disque of the Interstate Commerce Commission, and a hearing was opened at New York on August 5. In the enforced absence of Examiner Disque who was incapacitated through illness, J. C. Colquitt, classification agent of the Interstate Commerce Commission, assumed charge of the proceedings. The New York hearing was concluded at the end of the week and a hearing was opened at Chicago on August 12 before Examiner Disque.

At Chicago considerable attention was given to proposed Rule 10 which authorizes mixed carloads at the carload rate applicable to the highest classed or rated article. A number of witnesses explained how the rule would work a hardship on their particular industries. Members of the special committee which prepared the proposed classification were asked whether if, as a result of the application of the proposed rule, it could be shown that an undue hardship had been worked, the carriers would be willing to establish a specific mixture. They replied they would do so provided that the hardship resulting was an undue hardship. H. C. Barlow of the Chicago Association of Commerce, spoke in favor of Rule 10. He stated that terminals were never so congested as at present and that one thing that would materially relieve the congestion was a mixed carload rule which would permit the shipper to use his own terminal. The rule, he added, would avoid expense to the carrier in handling much of what is now shipped as l. c. l. freight. Official Classification territory has had a mixed carloading rule for years, and commerce has thrived as a result of it. Rule 10, he thought, was the best rule which could be framed, and he urged that it be given a fair trial.

The remainder of the hearing was devoted to a consideration of complaints regarding the classification of specific commodities. The fourth hearing on the classification was opened at Omaha, on August 19.

## Commission and Court News

### Interstate Commerce Commission

The Chamber of Commerce of Cedar Rapids, Ia., has filed complaints with the Interstate Commerce Commission against the new rate on coal from Illinois mines to Cedar Rapids.

The commission has set September 20 as the date for a hearing at Portland, Ore., on the rates on fruit, etc., from Washington, Oregon and Idaho. On September 23 hearings will be held in the same place relative to diversion and reconsignment rules.

The National Council of Farmers' Co-Operative Associations, of which Clifford Thorne is general counsel, has filed a complaint with the Commission against the rates on corn, oats, rye and barley resulting from the Director General's recent 25 per cent increase in freight rates.

### Heated Car Service Regulations

#### *Opinion by the Commission:*

Under their present tariff rules, railroads are liable for loss or damage due to frost, freezing, or overheating, not the direct result of actionable negligence of the shipper, when, at the request of the shipper, and for a charge in addition to the rate, the carriers furnish protection to perishable commodities against heat or cold. A proposed amendment intended to relieve the roads of liability for loss or damage to protected shipments between points in the United States and points in Canada is found to have been unlawful as to traffic from points in the United States to destinations in Canada. The determination of the propriety of the proposed new tariff rule applicable to shipments from points in Canada to destinations in the United States is left with the Canadian commission. (50 I. C. C. 620.)

### Personnel of Commissions

W. J. Patterson has been appointed assistant chief of the Bureau of Safety, Interstate Commerce Commission, with office at Washington, D. C. Mr. Patterson has been an inspector of safety appliances under the commission for the past four years.

### Court News

#### Safety Appliance Act—Moving Defective Cars

The Circuit Court of Appeals, Sixth Circuit, holds that the federal safety appliance act does not permit a railroad company to move without penalty from one point to another a defective car not known to be defective, and which is not so moved for the purpose of repair, although in fact it is hauled to the nearest available point for repair.—C. & O. v. U. S., 249 Fed. 805. Decided April 5, 1918.

#### Hours of Service Act—Two Offices Virtually One

A tower office used continuously by three telegraph operators was burnt down, and thereafter an office at an adjoining station was used for some time, three operators being provided. The railroad company then placed a box car about the site of the old tower in the yards some distance from the station. The station then was operated only in the day; the agent-operator being on duty more than 12 hours, while the operator in the box car was on duty more than 12 hours at night. The Circuit Court of Appeals, Sixth Circuit, holds that the railroad company could not escape the provisions of the hours of service statute on the theory that the box car and station were separate offices, particularly as the station had been used as night and day office for more than a year previously, and the business conducted through the station and box car was unitary in character.—Grand Rapids & Indiana, 249 Fed. 646. Decided March 5, 1918.

### Decisions Under Federal Employers' Liability Act

The Utah Supreme Court holds that a plaintiff employed in a roundhouse, injured while engaged in repairing a passenger engine which before the injury had been used exclusively in interstate commerce, was being repaired so as to be again used for the same purposes, and was so used after repair, was engaged in interstate commerce.—Kuchenmeister v. Los Angeles & Salt Lake, (Utah), 172 Pac. 725. Decided April 20, 1918.

The Kentucky Court of Appeals holds that if old ties were being thrown over an interstate railroad's embankment or fill to strengthen and make it safer for use in transportation, the company's servant, when injured in such work, was engaged in interstate transportation, or in work so closely related as to be practically a part of it.—Ohio Valley v. Brumfield's Adm. (Ky.), 203 L. W. 541. Decided May 28, 1918.

The West Virginia Supreme Court of Appeals holds that an electrical engineer, employed by a railroad to instruct its motormen how to operate motors in interstate business was while so employed engaged in interstate commerce within the meaning of the act. The duties of such employee requiring him to ride passenger and freight trains, and at times to board them while in motion, and whose time, pay and service began and ended at a certain point on the railroad, remained such employee within the meaning of the act so long as he was engaged in the discharge of his duties as such and while attempting to board a freight train to get back to his initial point in order to complete his day's service.—Dumplin v. Norfolk & Western, (W. Va.), 95 S. E. 863. Decided March 19, 1918. Rehearing denied May 9, 1918.

### Cartage and Demurrage Tariffs

In proceedings against the Michigan Central for failure to observe published tariffs by giving discriminatory privileges in regard to transportation in failing to exact demurrage charges, the railroad contended both that the specified free time had not elapsed and that the time provisions of the demurrage tariff were generally inapplicable in the circumstances. The case grew out of the great congestion of traffic in and about Detroit during the summer of 1912. Certain carloads of building material were delayed after arrival because, according to the indictment, the consignee was not ready to use the material and had no yards to store it. A concession was made to the consignee in not being charged one dollar a day for each car, according to the published demurrage tariff. The railroad's theory was that the delays were caused by the traffic congestion, which was beyond its control, and that the cancelling of the charges was not a concession. In affirming a conviction as to certain of the cars the Circuit Court of Appeals, Sixth Circuit, found from the record that failure to make delivery of the contents of the cars within the free time was due to the fault of the consignee and not of the railroad. It was immaterial that the cars had been placed on the delivery track in an order different from that of their shipment, in which order the consignee wanted their contents, any claim of the consignee on this account being separate from that of liability for demurrage. A provision of a demurrage tariff that no demurrage charges shall be assessed for detention of cars through railroad errors or omissions was held to refer to such errors and omissions after placement of the cars on delivery tracks and notice thereof. Under a provision of a demurrage tariff for extra free time in case of bunching, as the direct result of the act or neglect of the carrier, bunching as the result of the consignee's previous fault in not accepting will not avail. Though a demurrage tariff contemplates a notice of arrival of cars and a notice of placement, any notice of placement agreed on by the parties is sufficient to start the running of time, irrespective of sufficient preliminary notice of arrival. The trial court imposed the full penalty of \$24,000 for the failure to charge about \$60 demurrage on 12 out of 30 cars covered by the indictment. It was held that the trial court, in deciding on the penalty, could consider discrimination disclosed for which there could be no conviction until the Interstate Commerce Commission passed on the matter, or even if it did not violate the letter of any demurrage or other tariff. W. Evans, D. J., dissented on the last point.—Michigan Central v. United States, 246 Fed. 353.

# ANNUAL REPORT

## St. Louis Southwestern Railway Co.—Twenty-seventh Annual Report "Cotton Belt Route"

### OFFICE OF CHAIRMAN OF THE BOARD OF DIRECTORS.

NEW YORK, May 15, 1918.

### To the Stockholders of the St. Louis Southwestern Railway Company:

The Twenty-seventh annual report of your company, for the calendar year ended December 31, 1917, is herewith presented.

Report of Mr. J. M. Herbert, President, which follows, shows operating revenues, expenses, and operating results, as well as the financial and physical condition of the property.

### INVESTMENT IN ROAD AND EQUIPMENT.

Liberal expenditures have been made for additions and betterments to road and equipment, as reflected in Exhibit "H" on page 33.

During the year \$1,204,044.79 was charged to "Road and Equipment—Road," and "Road and Equipment—General Expenditures," of which \$936,534.12 was appropriated from income and \$17,313.81 from surplus, account "Donations" made by individuals and companies. Expenditures amounting to \$256,716.22 were made and charged to "Road and Equipment—Equipment." The total expenditures for road and equipment for the year aggregated \$1,460,761.01.

### FEDERAL CONTROL.

Under the Act of Congress, approved March 21, 1918, enacted pursuant to the proclamation issued by the President of the United States December 27, 1917, taking over the control and operation of the railroads of the country under authority vested in him by the Act of Congress of August 29, 1916, the possession and control of the properties of this company were, effective at noon December 28, 1917, vested in the United States Railroad Administration, Honorable W. G. McAdoo, Director General of Railroads. The Act contemplates that the President of the United States, or his authorized agents, shall make a contract with each company covering the operation of its property during Government control, and the payment of its guaranteed compensation; and further provides that, where, by reason of exceptional circumstances, the net operating income during three-year period upon which the compensation is to be based is plainly inequitable as a fair measure of just compensation, the President may make such an agreement for compensation as, under the circumstances, he may find just. Attention is being given to the preparation of this contract. Some exceptional circumstances, affecting the operations of this company during the three-year period, will be presented to the Government for consideration.

### CAPITAL STOCK.

As indicated in Exhibit "N" on page 38, there has been no change made in the Capital Stock of the Company during the year.

### FUNDED DEBT.

Pursuant to authority delegated by the Board of Directors, a Sinking Fund was established to provide for the acquisition of First Consolidated Mortgage Bonds of the Company, for the purpose of aiding in their retirement, or refunding at maturity. The plan authorized provides for appropriation from income of the amounts expended in such acquisition. During the year an amount of \$670,000.00 par value First Consolidated Mortgage Bonds of the Company were acquired.

Under like authority, the proper officers of the Company called for payment, as of date April 1, 1917, and paid for and canceled on that date, \$690,000.00 par value unmatured Five Per Cent. Equipment Trust Gold Notes, Series "E," with interest to date of payment.

As set out in detail in Exhibits "O" and "P" on pages 39 and 40, funded debt outstanding in the hands of the public was reduced during the year in the sum of \$1,700,000.00, as follows:

### First Consolidated Mortgage Bonds Acquired:

|   |                |
|---|----------------|
| Bonds acquired under Sinking Fund Plan; 670 Bonds @ \$1,000.00 each .....                         | \$670,000.00   |
| <b>Equipment Trust Obligations Matured and Paid:</b>  |                |
| Equipment Trust—Pennsylvania Company for Insurances on Lives and Granting Annuities—Trustee ..... |                |
| \$34,000.00   |                |
| Special Equipment Trust—The Philadelphia Trust, Safe Deposit and Insurance Company—Trustee .....  | 66,000.00      |
| Series "A"—U. S. Mortgage and Trust Co. of New York—Trustee .....                                 | 46,000.00      |
| Series "D"—U. S. Trust Company of New York—Trustee .....  | 34,000.00      |
| Series "E"—Guaranty Trust Co. of New York—Trustee:  |                |
| Paid at maturity.....   | \$118,000.00   |
| Called and paid prior to maturity 690,000.00  | 808,000.00     |
| Series "F"—Guaranty Trust Co. of New York—Trustee .....   | 42,000.00      |
| Net Decrease .....  | \$1,700,000.00 |

### ARKANSAS & MEMPHIS RAILWAY BRIDGE AND TERMINAL COMPANY.

The property of the above company is owned jointly by The Chicago, Rock Island and Pacific Railway Company, the Missouri Pacific Railroad Company, and St. Louis Southwestern Railway Company; crossing the Mississippi River between Bridge Junction, Arkansas, and Memphis, Tennessee. To provide funds for the construction of the bridge and approaches, the Bridge and Terminal Company issued its First Mortgage Bonds in amount \$6,000,000.00, and Capital Stock, \$10,200.00. On account of market conditions, it was considered unwise to dispose of the First Mortgage Bonds at that time; therefore, to defray the cost of construction of the plant, the bridge and Terminal Company issued its Six Per Cent. Three Year, Gold Notes, in the amount of \$5,000,000.00, maturing January 1, 1918, which notes were secured by the \$6,000,000.00 Bridge and Terminal Company's First Mortgage Bonds. In addition to the amount received account of sale of \$5,000,000.00 notes, the three proprietary companies advanced \$170,000.00 each to the Bridge and Terminal Company construction account, necessary for its completion. Prior to maturity of these notes, namely, January 1, 1918, an agreement was made between the proprietary companies and the Bridge and Terminal Company, providing for refinancing the Bridge and Terminal Company by increasing its capital stock. This

Company accordingly purchased its pro-rata, or one-third, of the increased capital stock, in the sum of \$836,600.00 par value, and \$1,250,000.00, par value, of the Bridge and Terminal Company's First Mortgage Bonds. To accomplish its part of the refinancing of the Bridge and Terminal Company, it was necessary for your company to borrow \$1,227,000.00, of which amount \$562,000.00 has been liquidated at the date of this report; the balance, \$665,000.00, is the only loan of your company now outstanding. The three proprietary companies own all outstanding stocks and bonds of the Bridge and Terminal Company. Further reference is made in Exhibit "K" on pages 35 and 36 of this report.

### LIBERTY LOAN BONDS.

This company subscribed for \$1,000,000.00 United States Government Liberty Loan Bonds of the Second Issue. In the allotment by the Government, the subscription was reduced to \$880,000.00. At the close of the year, as shown by Exhibit "L" on page 36 of this report, these bonds were pledged as collateral, securing cash loans necessary in the Arkansas & Memphis Railway Bridge and Terminal Company transactions; a portion of which have since been paid and the bonds thus released are now carried in our treasury as free assets.

### FREE ASSETS.

In Exhibit "S" on page 43 will be found summary of property investments and advances unfunded, cash loans to controlled and affiliated lines, and unpledged securities (not necessary for control) held in company's treasury as of December 31, 1917, which indicates a prosperous financial condition of the Company.

Announcement is made, with profound sorrow, of the death, on April 30, 1918, of Mr. S. C. Johnson, General Auditor of the Company. Mr. Johnson had, for thirty-six years, faithfully and efficiently served the Company and its predecessors in an official capacity in Accounting Department.

It affords pleasure to the Board of Directors to express to officers and employees thanks for their co-operation and efficient service rendered during the year.

By order of the Board of Directors,

**EDWIN GOULD,**  
*Chairman.*

"COTTON BELT ROUTE"—ST. LOUIS SOUTHWESTERN RAILWAY CO.

OFFICE OF THE PRESIDENT.

ST. LOUIS, Mo., May 1, 1918.

MR. EDWIN GOULD,

*Chairman of the Board of Directors, New York, N. Y.*

DEAR SIR:—

Herewith is submitted report, for the year ended December 31, 1917, of the operations and affairs of the Company, its financial and physical condition, &c, at the close of the year.

The average main track mileage operated was 1,753.5 miles as compared with 1,753.8 miles for the previous year. In exhibit 1 on page 64 of the appendix hereto will be found the detail of the miles of track operated in the several states.

The financial results from operation, for the years 1917 and 1916, will be found in the condensed statements immediately following:

### FINANCIAL RESULTS FROM OPERATION—SYSTEM.

### INCOME STATEMENT FOR CALENDAR YEAR.

| ITEM.                       | YEAR ENDED     |                |
|-----------------------------|----------------|----------------|
|                             | Dec. 31, 1917. | Dec. 31, 1916. |
| AVERAGE MILES OPERATED..... | 1,753.5        | 1,753.8 — 0.3  |

### OPERATING INCOME:

|                                 |                 |                 |                 |
|---------------------------------|-----------------|-----------------|-----------------|
| Railway Operating Revenues..... | \$17,309,656.93 | \$13,850,130.43 | +\$3,459,526.50 |
| Railway Operating Expenses..... | 10,896,859.93   | 9,318,305.55    | +\$1,578,554.38 |

Net Revenue from Railway Operations .....

|                  |                 |                 |                 |
|------------------|-----------------|-----------------|-----------------|
| Operations ..... | \$ 6,412,797.00 | \$ 4,531,824.88 | +\$1,880,972.12 |
|------------------|-----------------|-----------------|-----------------|

|                                |                 |               |                |
|--------------------------------|-----------------|---------------|----------------|
| Railway Tax Accruals.....      | \$ 1,075,096.36 | \$ 615,813.76 | +\$ 459,282.60 |
| Uncollectible Railway Revenues | 1,329.83        | 2,377.36 —    | 1,047.53       |

|             |                 |               |                |
|-------------|-----------------|---------------|----------------|
| Total ..... | \$ 1,076,426.19 | \$ 618,191.12 | +\$ 458,235.07 |
|-------------|-----------------|---------------|----------------|

|                               |                 |                 |                 |
|-------------------------------|-----------------|-----------------|-----------------|
| Railway Operating Income..... | \$ 5,336,370.81 | \$ 3,913,633.76 | +\$1,422,737.05 |
| NONOPERATING INCOME..         | 1,823,129.35    | 1,525,295.56    | +\$ 297,833.79  |

|                                    |                 |                 |                 |
|------------------------------------|-----------------|-----------------|-----------------|
| GROSS INCOME.....                  | \$ 7,159,500.16 | \$ 5,438,929.32 | +\$1,720,570.84 |
| DEDUCTIONS FROM GROSS INCOME ..... | 3,286,041.84    | 3,216,764.35    | +\$ 69,277.49   |

|                 |                 |                 |                 |
|-----------------|-----------------|-----------------|-----------------|
| NET INCOME..... | \$ 3,873,458.32 | \$ 2,222,164.97 | +\$1,651,293.35 |
|-----------------|-----------------|-----------------|-----------------|

### DISPOSITION OF NET INCOME:

|  |               |               |                |
|--|---------------|---------------|----------------|
| Income Applied to Sinking Funds .....                | \$ 412,860.07 | .....         | +\$ 412,860.07 |
| Income Appropriated for Investment in Phys. Property | 971,390.20    | \$ 132,579.61 | +\$ 838,810.59 |

|             |                 |               |                  |
|-------------|-----------------|---------------|------------------|
| Total ..... | \$ 1,384,250.27 | \$ 132,579.61 | +\$ 1,251,670.66 |
|-------------|-----------------|---------------|------------------|

|  |                 |                 |                |
|--|-----------------|-----------------|----------------|
| INCOME BALANCE TRANSFERRED TO PROFIT AND LOSS..... | \$ 2,489,208.05 | \$ 2,089,585.36 | +\$ 399,622.69 |
|--|-----------------|-----------------|----------------|

## PROFIT AND LOSS STATEMENT.

| ITEM.<br>CREDITS:  | YEAR ENDED      |                 | + Increase.<br>—Decrease. | ITEM.<br>DEBITS:  | YEAR ENDED      |                 | + Increase.<br>—Decrease. |
|--|-----------------|-----------------|---------------------------|---|-----------------|-----------------|---------------------------|
|  | Dec. 31, 1917.  | Dec. 31, 1916.  |                           |   | Dec. 31, 1917.  | Dec. 31, 1916.  |                           |
| Credit Balance (at beginning of fiscal period).....  | \$ 6,074,555.58 | \$ 4,212,863.27 | +\$1,861,692.31           | Surplus Appropriated for Invest. in Phys. Property.....                                     | \$ 17,313.81    | \$ 11,701.74    | +\$ 5,612.07              |
| Credit Balance Transferred from Income.....  | 2,489,208.05    | 2,089,585.36    | + 399,622.69              | Funded Debt Discount Extinguished through Surplus.....                                      | .....           | 16,178.62       | — 16,178.62               |
| Unrefundable Overcharges.....  | 1,839.56        | 1,083.74        | + 755.82                  | Loss on Retired Road and Equipment—Road.....  | 26,356.32       | 28,656.12       | — 2,299.80                |
| Donations.....   | 17,313.81       | 11,701.74       | + 5,612.07                | Loss on Retired Road and Equipment—Equipment.....   | 389,888.77      | 195,528.17      | + 194,360.60              |
| Miscellaneous Credits:   |                 |                 |                           | Delayed Income Debits:  |                 |                 |                           |
| Adjustments Required to Bring to Par First Cons. Mtg. Bonds Reacquired at Less than Par..... | 261,858.27      | .....           | + 261,858.27              | Reparation Claims and Expenses—Ark. Rate Case.....  | 1,096.05        | 6,260.41        | — 5,164.36                |
| Miscellaneous .....  | 66,166.40       | 60,482.08       | + 5,684.32                | Tap Line Reparation Claims.....   | 78.00           | 3,752.44        | — 3,674.44                |
| Total .....  | \$ 8,910,941.67 | \$ 6,375,716.19 | +\$2,535,225.48           | Miscellaneous .....   | .....           | 16,677.76       | — 16,677.76               |
|  |                 |                 |                           | Miscellaneous Debits:   |                 |                 |                           |
|  |                 |                 |                           | Adjustment of Burnt Clay Ballast Store.....   | 161,815.70      | .....           | + 161,815.70              |
|  |                 |                 |                           | Adjustment of Memphis R. R. Term. Co.—Capital Stock and Advances "Written Off" in Part..... | 70,296.10       | .....           | + 70,296.10               |
|  |                 |                 |                           | Miscellaneous .....   | 18,385.53       | 22,405.35       | — 4,019.82                |
|  |                 |                 |                           | Balance, Credit, Carried to General Balance Sheet.....                                      | 8,225,711.39    | 6,074,555.58    | + 2,151,155.81            |
|  |                 |                 |                           | Total .....   | \$ 8,910,941.67 | \$ 6,375,716.19 | +\$2,535,225.48           |

## OPERATING REVENUES.

The total operating revenues for the year amounted to \$17,309,656.93 as compared with \$13,850,130.43 for the previous year; an increase of \$3,459,526.50, or 24.98%. Exhibit "A" on page 26 furnishes in detail the increases and decreases in the several classes of revenue.

On page 45 will be found statistical information disclosing the gratifying increases in passenger and freight traffic handled, and the revenues accruing therefrom, as compared with the previous year.

It is pertinent to direct attention to decrease of 7.51% in the tonnage of cotton handled during the year as compared with previous year. The decrease in the tonnage of this commodity, which constitutes an important factor in the traffic of the Company, was due, in a measure, to embargoes on shipments of cotton to New England points, and for export, which were in effect during the latter months of the year; also to the fact that the crop produced was somewhat smaller than the previous year. At the date of this report, quite a large volume of cotton, thus held back, has been moved, which will favorably affect the results for the year 1918. Efforts of the Company to induce farmers to diversify their crops, with view of producing food and feed, have been effective. As a result, there has been a substantial increase in other products of agriculture; notably in that of rice, which, for the year, shows an increase of 38,722 tons, or 57.34% over the previous year. Conspicuous increases are also shown in the tonnage of oats and corn. Growing out of the prosperity of agriculturists, manufacturers, and merchants along the line, and the activity of the Traffic Department in the solicitation of classes of freight not heretofore handled by this company in considerable volume, a material increase is shown in many commodities.

## OPERATING EXPENSES.

The total operating expenses for the year amounted to \$10,896,859.93 as against \$9,318,305.65 for the previous year; an increase of \$1,578,554.38, or 16.94%. The increase in the operating expenses was due, to some extent, of course, to the increase in the volume of traffic handled; also, in a great measure, to the general increases paid for labor and material. Exhibit "A" on page 26 furnishes the amounts and percentages of increase in the several general operating expense accounts.

In the exhibit mentioned in the foregoing paragraph will be found the ratios of operating expenses to operating revenues, and ratios of the several general operating expense accounts to the total operating expenses. The ratio of total operating expenses to total operating revenues for the year was 62.95% compared with 67.28% for the previous year; or a decrease of 4.33%.

## CAR AND TRAIN LOADING.

The average load in tons per loaded freight car mile and per loaded freight train mile for the past nine years was as follows:

Average load in tons per loaded car mile, including Company material:

| Year ended<br>June 30 | St. L. S-W. Ry. Co. | St. L. S-W. Ry. Co.<br>of Texas. | System. |
|-----------------------|---------------------|----------------------------------|---------|
| 1910                  | 18.58               | 16.89                            | 18.14   |
| 1911                  | 18.78               | 17.30                            | 18.32   |
| 1912                  | 18.02               | 16.44                            | 17.54   |
| 1913                  | 18.36               | 16.44                            | 17.78   |
| 1914                  | 18.22               | 16.19                            | 17.62   |
| 1915                  | 17.95               | 16.57                            | 17.55   |
| 1916                  | 18.18               | 17.40                            | 17.95   |

Average load in tons per train mile, including Company material:

| Year ended<br>June 30 | St. L. S-W. Ry. Co. | St. L. S-W. Ry. Co.<br>of Texas. | System. |
|-----------------------|---------------------|----------------------------------|---------|
| 1910                  | 434.16              | 196.27                           | 326.11  |
| 1911                  | 423.70              | 200.04                           | 320.16  |

| Year ended<br>December 31. | St. L. S-W. Ry. Co. | St. L. S-W. Ry. Co.<br>of Texas. | System. |
|----------------------------|---------------------|----------------------------------|---------|
| 1916                       | 485.57              | 250.67                           | 390.40  |
| 1917                       | 616.62              | 286.10                           | 474.06  |

## RATE SITUATION.

In the Twenty-fifth annual report, for the year ended June 30, 1916, mention was made of the efforts being put forth by this company and other interested carriers to secure certain advances in both state and interstate freight rates and passenger fares. Following will be found information as to the results of these efforts, or the status of the cases still unsettled, and a resume of other cases now pending.

MISSOURI—PASSENGER. Growing out of efforts put forth by the carriers in Missouri to secure increased revenue from the handling of Missouri state

passenger traffic, effective January 1, 1918, the carriers were authorized by the Public Service Commission to advance the Missouri state passenger fare from two (2c) cents per mile to two and one-half (2½c) cents per mile, for one way passage; and from two (2c) cents per mile to two and four-tenths (2.4c) cents per mile, for round trip passage; at the same time the carriers were required to place on sale individual five hundred (500) mile tickets good locally, and one thousand (1000) mile tickets, interchangeable between all Missouri lines, and good between all points in the State of Missouri, both at two and one-quarter (2¼c) cents per mile.

ARKANSAS—PASSENGER. The three (3c) cent maximum passenger fare, covering Arkansas state traffic, under a temporary injunction, to which reference was made in the annual report for year ended June 30, 1916, is being collected. During the past year this company and other carriers, parties to the suit, to have the three (3c) cent maximum fare made permanent, presented testimony in the case in the United States District Court, for the Eastern District of Arkansas, and the State of Arkansas will present its testimony within the next few weeks, the date as yet not having been definitely arranged at this time. As the collection of a three (3c) cent maximum fare covering state passenger traffic is necessary to afford a reasonable return over operating expenses, and as a large proportion of the passenger traffic of this company, in the State of Arkansas, is intrastate, it is essential that the three (3c) cent fare be made permanent. Furthermore, as the Arkansas interstate passenger fare is, generally speaking, predicated on the intrastate fare, a decision favorable to the carriers is of material importance.

LOUISIANA—FREIGHT. In the case generally known as the "Interstate Commerce Commission, I. & S. Docket No. 1000," involving interstate freight rates to and from points in Louisiana, and Louisiana state freight rates alleged to be discriminatory against interstate traffic, argument has been made before the Interstate Commerce Commission, but, to date, the Commission has withheld the issuance of its order in the premises.

TEXAS—FREIGHT. In the re-hearing by the Interstate Commerce Commission in the so-called "Shreveport Case," which was held during the year 1917 at the instance of the Texas Railroad Commission, which had not taken any part in the former hearing of the case, the Interstate Commerce Commission recently rendered an opinion re-affirming its former findings, as to the paramount issue involved in the case, namely, the jurisdiction of the Interstate Commerce Commission over state rates, in connection with which interstate rates were involved. The opinion carried with it an order, effective May 1, 1918, providing for slight reductions in the class, and some commodity rates, and increases in others. It is impossible at this date to state the effect of the order in question on the freight revenues of this company.

This company, with other Texas carriers involved in the case, prepared a large volume of data and presented much testimony, indicating that the present rates were inadequate to defray the expense of handling the traffic and provide a reasonable return on the investment in the properties.

MISSOURI AND ARKANSAS—FREIGHT. The decision of the Interstate Commerce Commission, rendered in the Spring of 1917, in the case brought by the Memphis Freight Bureau, which held the class and commodity rates between Memphis and Arkansas to be reasonable as a whole, and ordered the removal of the discrimination caused by the unduly low state rates in Arkansas, was subsequently arrested for further consideration. This case has been extended into what is known as the "Memphis-Southwestern Investigation" and involves interstate rates to and from points in Arkansas, Oklahoma, and Southeast Missouri, and also state rates in Arkansas and Southeast Missouri, and a new hearing is now being conducted, in which this company and other interested lines are presenting testimony indicating the necessity for an increase in the rates involved in the case to meet the cost of operation, which has been greatly increased, due to constantly increasing cost of labor and material.

## AGRICULTURAL AND INDUSTRIAL.

Throughout the major portion of the territory traversed by these lines, the agricultural conditions for the past year were generally most satisfactory. Food production was the dominant factor, resulting in an extensive diversification of crops. The yields and prices obtained, for the most part, were excellent.

## FEDERAL VALUATION.

In the Twenty-sixth annual report for the year ended December 31, 1916, statement was made that the "Tentative Valuation" of these lines, which work was undertaken by the Interstate Commerce Commission, late in the year 1914, would probably be available in the latter part of 1917. However, up to the date of this report, the Interstate Commerce Commission has not presented the results of its valuation of these lines.

To date the amounts expended by this company on account of the Federal Valuation work are as follows:

|   |             |
|---|-------------|
| Year ended June 30, 1915.....           | \$14,812.81 |
| Year ended June 30, 1916.....           | 30,639.66   |
| Six months ended December 31, 1916..... | 10,478.17   |
| Year ended December 31, 1917.....       | 26,435.61   |
| Total .....                             | \$82,366.25 |

## INVESTMENT IN ROAD AND EQUIPMENT.

Statement of expenditures made for additions and betterments during the year will be found in Exhibit "H" on page 33 under heading, "Investment in Road and Equipment."

## EQUIPMENT.

The program providing for the rehabilitation of freight equipment to extend over a period of three years, to which reference was made in previous annual report, has been carried on. During the year 2,003 freight train cars were dismantled, and rebuilt.

In the previous annual report, statement was made that contract had been let for the building of 125 steel underframe 80,000 pounds capacity box cars, to fill vacancies caused by the destruction of a similar number of 60,000 pounds capacity wooden box cars, covered by Equipment Trust Agreements. This equipment was received during the month of January, 1918, and is now in use.

During the year, 42 freight-train cars of 60,000 pounds capacity were built at Company Shops to replace trust equipment destroyed by wrecks, fire or otherwise.

## FEDERAL TAXES.

The state, county and municipal taxes have been increasing from year to year and the Company's "Railway Tax Accruals" for the years ended December 31, 1916, and 1917, were materially increased by the Income Tax Law of 1916, approved September 8, 1916. The War Revenue Act of 1917, approved October 3, 1917, placed an additional heavy tax on the Company in the year ended December 31, 1917. By the Act last mentioned, the taxes were increased for the past year by the additional four per cent. on the net income in the sum of \$153,419.55, and by the Excess Profits Tax in the sum of \$132,483.34.

## VALLEY TERMINAL RAILWAY.

Mention was made in annual report for year ended December 31, 1916, of the organization of the Valley Terminal Railway, for the purpose of constructing a complete freight terminal at Valley Junction, in St. Clair County, Illinois, adjoining East St. Louis, Ill. The completion of this terminal has been unavoidably delayed owing to difficulty in obtaining necessary materials, and litigation; but, at the time of this report, the work is nearing completion, and the terminal is expected to be ready for operation at an early date. A lease is now being drawn providing for the leasing and operation of the terminal by this company.

## EXHIBIT S.

## SUMMARY OF PROPERTY INVESTMENTS AND ADVANCES UNFUNDED, CASH LOANS CONTROLLED AND AFFILIATED LINES, AND UNPLEDGED SECURITIES (NOT NECESSARY FOR CONTROL) HELD IN COMPANY'S TREASURY, AS OF DECEMBER 31, 1917—SYSTEM.

| ACCOUNTS.   | DETAILED AMOUNT. | TOTAL AMOUNT. |
|---|------------------|---------------|
| <b>INVESTMENT IN ROAD AND EQUIPMENT</b>                                     |                  |               |
| ROAD, UNFUNDED—   |                  |               |
| St. L. S-W. Ry. Co. of Texas, expenditures,<br>Jan. 1 to June 30, 1917..... | \$ 482,643.43    | \$ 482,643.43 |
| SINKING FUNDS—  |                  |               |
| St. L. S-W. First Consolidated Mortgage<br>Bonds—Par Value .....            | \$ 670,000.00    |               |
| Cash Deposit .....  | 4,718.34         | 674,718.34    |

[ADV.]

## INVESTMENTS IN AFFILIATED COMPANIES—

## STOCKS UNPLEDGED—

|   |               |            |
|---|---------------|------------|
| Arkansas & Memphis Ry. Bridge and Terminal Co., Preferred Capital Stock—Par Value ..... | \$ 550,000.00 | 550,000.00 |
|---|---------------|------------|

## BONDS—UNPLEDGED—

|  |               |              |
|--|---------------|--------------|
| Paragould S-E. Ry. Co., First and Ref. Mtg. Bonds—Par Value.....                         | \$ 511,000.00 |              |
| Southern Ill. & Mo. Bridge Co., First Mortg. Bonds—Par Value.....                        | 600,000.00    |              |
| Arkansas & Memphis Ry. Bridge and Terminal Co., First Mtg. Bonds—Par Value. 1,250,000.00 |               | 2,361,000.00 |

## ADVANCES—OPEN ACCOUNTS—

|  |               |            |
|--|---------------|------------|
| Southern Ill. & Mo. Bridge Co.—Construction Advances .....     | \$ 40,099.29  |            |
| Gray's Point Terminal Ry. Co.—Construction Advances .....      | 75,326.76     |            |
| Paragould Southeastern Ry. Co.—Construction Advances .....     | 7,118.94      |            |
| The Pine Bluff Ark. River Ry.—Construction Advances .....      | 32,107.91     |            |
| Memphis R. R. Terminal Co.—Construction Advances .....         | 50,000.00     |            |
| Dallas Terminal Ry. and U. D. Co.—Construction Advances .....  | 5,454.09      |            |
| Stephenville N. & S. Texas Ry. Co.—Construction Advances ..... | 67,370.22     | 277,477.21 |
| Valley Terminal Railway.....                                   | \$ 460,870.80 | 460,870.80 |

## LOANS—COVERED BY BILLS RECEIVABLE—

|                              |               |            |
|------------------------------|---------------|------------|
| Valley Terminal Railway..... | \$ 460,870.80 | 460,870.80 |
|------------------------------|---------------|------------|

## UNADJUSTED DEBITS—

## PROPERTY ADVANCES—IN SUSPENSE—

|  |              |           |
|--|--------------|-----------|
| Illino. Mo., Terminals—Realty Advances in Suspense ..... | \$ 25,821.77 | 25,821.77 |
|--|--------------|-----------|

## SECURITIES ISSUED OR ASSUMED, UNPLEDGED—

|  |               |                 |
|--|---------------|-----------------|
| St. L. S-W. Ry. Co., Common Stock—Par Value .....                | \$ 143,900.00 |                 |
| St. L. S-W. Ry. Co., Preferred Stock—Par Value .....             | 106,350.00    |                 |
| St. L. S-W. Ry. Co., First Term. & U. Mtg. Bonds—Par Value ..... | 4,114,000.00  | 4,364,250.00    |
| Total .....  |               | \$ 9,196,781.55 |

## Equipment and Supplies

## Locomotives

THE INDIAN STATE RAILWAYS are inquiring for several Consolidated locomotives.

THE RAINY WOOD & COKE COMPANY is inquiring for one six-wheel switching locomotive.

## Iron and Steel

THE DULUTH, MISSABE & NORTHERN has ordered 318 tons of steel for a coal handling bridge from the Illinois Steel Company.

THE CHICAGO & NORTHWESTERN has ordered 185 tons of steel for a turntable at Cedar Rapids, Ia., from the American Bridge Company.

THE TRANS-AUSTRALIAN RAILWAY.—The Commonwealth Railways Commissioner has recently issued an interesting folder, descriptive of the east to west Trans-Australian Railway from Kalgoorlie in Western Australia to Port Augusta in South Australia. It is furnished with two excellent maps of the railway, one showing its immediate connections, and the other how it joins up the capitals of all the Australian States. Time-tables of the through services are given, with an illustrated description of the route and of the rolling-stock provided on the new line. The engineering features of the line were fully described in the *Railway Age* of February 1, 1918.

## Supply Trade News

Sylvanus L. Schoonmaker, chairman of the board of directors of the American Locomotive Company, died on August 17 at his summer home at Locust Valley, L. I.

The sale of the property of the Orenstein-Arthur Koppel Company at Koppel, Pa., scheduled to have been held on August 15 by the alien property custodian of the United States, has been postponed until September 12.

Arthur Aigeltinger has been elected president of the American Malleables Company, with headquarters at Lancaster, N. Y., to succeed A. S. Blagden, resigned to accept the position of vice-president and general manager of the Air Reduction Company, of New York City.

The Chicago Pneumatic Tool Company has started work on the construction of an addition to the Cleveland plant, which is planned to double the present output. It is expected that work will be completed on the building about November 1. The necessary equipment has been ordered.

Richard H. Wheeler has been appointed traffic manager of the nitro plant of the Hercules Powder Company, Nitro, W. Va., effective July 15, 1918. G. D. Moffett, general agent of the Chesapeake & Ohio at Charlestown, W. Va., has been appointed assistant traffic manager of the same plant, effective August 15.

Press G. Kennett, western railroad sales manager of the Flint Varnish & Color Works, with headquarters at Chicago, has resigned to become manager of the railroad department of the C. R. Cook Paint & Varnish Company, Kansas City,

Mo. Mr. Kennett was connected with the Flint Varnish & Color Works for eight years and previous to that had 17 years of railroad experience in the stores and purchasing departments of several lines in the Southwest.

**Henry Stroh**, who for the past ten years was connected with the Elliot Frog & Switch Company, prior to which time he was associated with the Republic Iron & Steel Company, both of East St. Louis, has entered the service of the Walter A. Zelnicker Supply Company, St. Louis, Mo., in the sales department, and Merle G. Peterson, who was formerly associated with the Niles-Bement-Pond Company and the Pratt & Whitney Company, has recently entered the company's Chicago sales department.

**R. L. Mason**, who is the Pittsburgh representative of the C. F. Massey Company, manufacturers of reinforced concrete railway culvert pipe and of Klein & Logan Company, manufacturers of railway tools and for years widely known in Pittsburgh in connection with railroad work, has just finished a ten-day special training in Columbia University, New York City and will sail shortly for France, where he will be connected in an administrative capacity with the Y. M. C. A. During his absence his business will be taken care of by **W. I. Creese**.

**W. J. Schlacks**, vice-president and director of McCord & Co., at Chicago, has incorporated the Locomotive Lubricator Company and has purchased the McCord locomotive lubricator. The new company will manufacture and promote the sale of the Schlacks system of locomotive forced feed lubrication. **O. H. Neal** and **C. W. Rudolph**, sales engineers, who have been associated with Mr. Schlacks in McCord & Co., have joined the new company, now located in the Tower building, Chicago. Mr. Schlacks' photograph and biographical sketch were published in the *Railway Age* on November 23, 1917.

**T. H. Patenall**, Canadian representative of the Union Switch & Signal Company, at Montreal, Que., died in that city on August 6. Mr. Patenall was one of the best known signal engineers in America, having been prominent in the manufacturing branch of the business for over 30 years. He was born in England and had had extensive experience in that country before coming to the United States in 1888. He was engaged in that year with Henry Johnson in the Johnson Railroad Signal Company at Rahway, N. J., and continued with that concern when it was absorbed by the National Switch & Signal Company. The National was later bought by the Union and thus Patenall came to be with the latter company. His most notable work was in connection with the redesigning of the controlled manual signal apparatus to fit it to meet the demands of American practice as developed on the New York, New Haven & Hartford and the New York Central, and the modification and refinement of the Webb & Thompson staff instrument.

## Trade Publications

**TRACK CONSTRUCTION CATALOGUE**.—The St. Louis Frog & Switch Company, St. Louis, Mo., has issued a new general catalogue, designated as No. 2, containing a complete account of its line of track materials and supplies. Forty pages are also devoted to the tabulation of useful track data, including tables of mathematical properties of turn-outs, crossings, curves, etc. Following this are full page illustrations of the various types and sizes of switches, frogs, crossings and frog and switch parts, switch stands for steam railways, electrical railways and industrial track use. Manganese track construction is also covered in detail. On account of its completeness the book constitutes a valuable reference on track construction.

**EXTENSION OF SAO PAULO-RIO GRANDE RAILWAY**.—By decree No. 13067, of June 12, 1918, the president of Brazil has approved the plans for the second extension of the Peixe River of the São Paulo-Rio Grande Railway. This extension comprises a distance of about 23 kilometers (14 miles). The approved estimate of the cost of construction is 1,109,266 milreis (about \$277,314).—*Commerce Reports*.

## Railway Construction

**ILLINOIS CENTRAL**.—This company has awarded contracts for the construction of ten water softening plants at different points on its lines. A contract for a plant at Dubuque, Iowa, which will have a capacity of 30,000 gal. per hr., was awarded to the William Graver Tank Works, Chicago. Plants at Carbondale and at Freeport, Ill., which will have capacities of 50,000 gal. per hr., will be built by the International Filter Company, Chicago. At Charles City, Iowa, a 6,000-gal.-per-hr. capacity plant will be constructed by the L. M. Booth Company, Chicago. This company will also construct plants of the same capacity at Osage, Iowa, and Mona. At Independence, Iowa, a 15,000-gal.-per-hr. plant will be built by the Permutit Company, Chicago. The Railroad Water & Coal Handling Company, Chicago, will build a 30,000-gal.-per-hr. capacity plant at Cherokee, Iowa; a 6,000-gal.-per-hr. capacity plant at Merrill, Iowa, and one of the same capacity at Marcus, Iowa.

The Illinois Central has also awarded a contract for the construction of mechanical facilities at Benton, Ill., to C. B. Johnson & Son, Chicago. The work will be done on a cost plus percentage basis, and includes the construction of two new cinder pits, a locomotive crane, a frame enginehouse, a boiler house and additional water facilities.

The road has also awarded a contract to C. B. Johnson & Son, Chicago, for the construction of a five-stall roundhouse, a boiler room, a sand house, locker room, oil room, and cinder pit, and the installation of a Robertson cinder conveyor, at DuQuoin, Ill. The work will be done on a cost plus percentage basis.

The Illinois Central has also awarded a contract to T. S. Leake & Co., Chicago, for the construction of mechanical facilities at Hawthorne, Ill., including an eight-stall roundhouse, a power plant, a locker room and toilet facilities—all fireproof and of concrete and brick construction, a clam-shell cinder pit, an 85-ft. turntable, sewers, water works and necessary trackage. The contract was let on a cost-plus-percentage basis and the estimated outlay for the work is approximately \$150,000.

**NORFOLK & WESTERN**.—This company has awarded a contract to the Roberts & Schaefer Company, Chicago, for the complete design and construction of a 1200-ton capacity, 6-track, automatic-electric, reinforced concrete locomotive coaling plant at West Roanoke, Va. The structure will be equipped with a concrete "Rand S" gravity sand plant, using Beamer patent steam sand dryers, and duplicate hoisting and distributing coal equipment. A unique feature in the design will be installation over the top of the bin of electrically-operated shaking screens for screening Pocahontas mine run coal over 2 in. perforations, the coal smaller than 2 in. to be used in mechanical stoker locomotives on freight trains. The lump coal will be used on passenger locomotives. The construction of the plant will commence immediately, and the cost will be approximately \$165,000.

**BRAZIL BURNS FLOUR FOR FUEL**.—A despatch from Buenos Aires to the New York Commercial is authority for the report that after corn and other cereals had been burned at Buenos Aires for fuel because of the coal and wood shortage, the electric company and other manufacturers started to burn tons of flour. Coal is \$70 a ton, gold, and a corresponding quantity of wood costs \$40. At that, both are practically unobtainable. Strikes financed by German agents and the lack of repair parts is paralyzing the lone railway which connects the city with the northern timber lands.

**ENGLAND TO EGYPT VIA AIR**.—Two royal air force officers, with two mechanics, recently completed a flight from England to Egypt, a distance of 2,000 miles, in a type of airplane that has seen considerable service on the front. The official report in announcing this feat, says: "One or two halts were made for petrol, but the flight was merely a bit of routine work."

## Railway Officers

### Railroad Administration

**J. J. Tatum**, manager of the car repair section under the United States Railroad Administration, has been appointed general supervisor of car repairs; **F. P. Pfahler**, mechanical engineer of the locomotive section, has been appointed chief mechanical engineer; **John McManamy** has been appointed general superintendent of equipment, west, and **George N. DeGuire** has been appointed general supervisor of equipment, east; all with headquarters at Washington, D. C.

#### Federal and General Managers

**E. D. Bronner**, federal manager of the Michigan Central, with office at Detroit, Mich., has had his authority extended over the Grand Rapids & Indiana, effective August 15.

The authority of **P. E. Crowley**, federal manager of the New York Central and the Lake Erie & Pittsburgh, with office at New York, has been extended over the Cherry Tree & Dixonsville.

The authority of **E. M. Costin**, federal manager of the Cleveland, Cincinnati, Chicago & St. Louis, with office at Cincinnati, Ohio, has been extended over the Muncie Belt Railway and the Indianapolis Union.

**C. M. Kittle** is no longer federal manager of any part of the Louisiana Railway & Navigation Company's property, the government having made a contract with that company providing for immediate relinquishment of its lines, to be operated by the corporation.

**L. Kramer**, federal manager of the Missouri, Kansas & Texas, the St. Louis-San Francisco, the Oklahoma Belt, and the West Tulsa Belt, has had his jurisdiction extended to include the Kansas City, Clinton & Springfield, with headquarters at St. Louis, Mo., effective August 10.

**Louis S. Taylor**, controller of the Pullman Company, with headquarters at Chicago, has been appointed federal manager of that part of the property of the Pullman Company now under federal control, which will hereafter be known as the Pullman Car Lines, effective August 19. Mr. Taylor was born in Chicago, Ill., in July, 1872, and in September, 1889, he entered the service of the Pullman Palace Car Company, now the Pullman Company, as a messenger boy in the financial department. Later he became consecutively clerk, paymaster and cashier. In December, 1907, he was appointed treasurer of the manufacturing department. Two years later he was elected treasurer of the entire company and in February, 1917, he was elected controller, which position he held until his appointment as federal manager. Mr. Taylor, besides having charge of the operation of the Pullman car lines, will also have charge of the car repair shops located at various points throughout the United States.

The authority of **F. H. Alfred**, federal manager of the Pere Marquette and the car ferry lines on Lake Michigan, with office at Detroit, Mich., has been extended over the Detroit, Bay City & Western, the Ann Arbor Railroad, the Detroit & Mackinac, the Port Huron & Detroit, and the Port Huron Southern.



Louis S. Taylor.

The authority of **G. L. Peck**, federal manager of the Pennsylvania Railroad, western lines, the Pittsburgh, Cincinnati, Chicago & St. Louis, the Cincinnati, Lebanon & Northern, the Lorain, Ashland & Southern, the Pittsburgh, Chartiers & Youghiogheny, the Calumet Western, the Englewood Connecting Railway and the South Chicago & Southern, with headquarters at Pittsburgh, Pa., has been extended over the Ohio River & Western Railway.

#### Operating

**O. F. Johnson**, assistant to general manager of the Minneapolis & St. Louis, has been appointed inspector of transportation, with headquarters at Minneapolis, Minn., and his former position has been abolished.

**W. E. McGarry**, supervisor of car service of the Southwestern region, has resigned to become assistant to the general manager of the Terminal Railroad Association of St. Louis, with headquarters at St. Louis, Mo.

**H. E. Hutchens** has been appointed terminal manager at Birmingham, Ala., with authority over the terminals of all lines within the switching limits of Birmingham, and **J. P. Walker** has been appointed terminal manager at Charleston, S. C., with authority over the terminals of all lines within the switching limits of Charleston.

**D. E. Rossiter**, trainmaster on the Racine and Southwestern division of the Chicago, Milwaukee & St. Paul, at Savanna, Ill., has been appointed superintendent of the La Crosse division, with headquarters at Milwaukee, Wis., succeeding **P. C. Eldredge**, resigned. **E. W. Lollis**, trainmaster on the Kansas City division, at Ottumwa Junction, Iowa, has been transferred to Savanna to succeed Mr. Rossiter. **R. D. Miller** has been appointed trainmaster of the Kansas City division to succeed Mr. Lollis, effective August 15.

**W. F. Giles**, superintendent of the Brookfield division of the Chicago, Burlington & Quincy, has had his jurisdiction extended over the Quincy, Omaha & Kansas City. **H. W. Hamm**, superintendent of the Centerville division of the Chicago, Burlington & Quincy, has had his jurisdiction extended over the Iowa & St. Louis, extending from Sedan, Iowa, to Elmer, Mo. The position of general superintendent of the Quincy, Omaha & Kansas City and the Iowa & St. Louis has been discontinued, effective August 16.

**F. P. Abercrombie**, acting division superintendent of the Pennsylvania Railroad, has been appointed superintendent of the Juniata division of the Pennsylvania Railroad, with headquarters at Bedford, Pa. The Huntingdon & Broad Top Mountain Railroad and the Bedford division of the Pennsylvania Railroad have been consolidated and are now operated as the Juniata division. **A. B. Cuthbert**, acting division superintendent of the Pennsylvania Railroad, has been appointed superintendent of the Cresson division, with office at Cresson, Pa. The Cresson and the Bellwood divisions of the Pennsylvania Railroad have been consolidated and are now operated as the Cresson division.

**A. J. Dawson**, whose promotion to superintendent on the St. Louis system of the Pennsylvania Lines West of Pittsburgh, with headquarters at Decatur, Ill., was announced in the *Railway Age* on July 26, was born in Jefferson county, Ohio, on August 1, 1868. Mr. Dawson began railway service as a telegraph messenger on the Cleveland and Pittsburgh division of the Pennsylvania Lines West on September 1, 1883. On January 22, 1885, he was promoted to telegraph operator on the same division. Subsequently he became train despatcher and assistant trainmaster. On July 9, 1900, he was appointed chief clerk to the superintendent of the Erie and Ashtabula division, and on October 19, 1903, he was promoted to trainmaster on the Cleveland and Pittsburgh division, with headquarters at Cleveland, Ohio, which position he held until his promotion to superintendent, as mentioned above.

#### Financial, Legal and Accounting

**H. T. Wickham** now has the title of general solicitor instead of general counsel of the Chesapeake & Ohio; and **Henry Taylor, Jr.**, now has the title of general attorney instead of general solicitor; both with offices at Richmond, Va.

**C. H. Westbrook**, auditor of disbursements, of the Chicago & North Western, with office at Chicago, Ill., has been appointed assistant federal auditor of that road, and **B. A. McManus**, assistant auditor of passenger accounts, with office at Chicago, has been promoted to auditor of disbursements.

**H. D. Heuer**, assistant secretary of the Terminal Railroad Association of St. Louis, has been appointed general auditor, and **F. M. McDonnell** has been appointed assistant general auditor of the Terminal Railroad Association of St. Louis, the St. Louis Merchants Bridge Terminal, the Wiggins Ferry, the St. Louis Transfer, the St. Louis Connecting Railway and the Interstate Car Transfer, effective August 1.

**L. J. Hensley**, general auditor of the Kansas City Southern, with headquarters at Kansas City, Mo., has been appointed also auditor of the Texarkana & Ft. Smith, with the same headquarters, succeeding **E. L. Parker**, assigned to other duties. **H. Visscher**, local treasurer of the Kansas City Southern, at Kansas City, has been appointed also acting federal treasurer of the Texarkana & Ft. Smith, with the same headquarters, succeeding **J. M. Salter**, assigned to other duties, effective August 20.

#### Traffic

**Henry Edwards Pierpont**, freight traffic manager of the Chicago, Milwaukee & St. Paul, with headquarters at Chicago, has been appointed traffic manager, succeeding **R. M. Calkins**,

resigned. Mr. Pierpont entered the service of the Chicago, Milwaukee & St. Paul in 1883 as a telegraph operator, and occupied various positions in the station and auditing departments, including the position of freight agent at Kansas City, Mo., until 1893, when he became division freight and passenger agent at La Crosse, Wis. He remained in that position until January 1, 1896, when he was made assistant general freight agent, with office at Chicago. Ten years later he was promoted to general

freight agent at Chicago and on January 15, 1913, he was again promoted to freight traffic manager with the same headquarters, which position he held until his recent appointment as traffic manager as mentioned above. The position of freight traffic manager has been abolished.

**F. P. Eyman**, freight traffic manager, and **Henry W. Beyers**, assistant freight traffic manager, of the Chicago & North Western, have been appointed assistant traffic managers with headquarters at Chicago; **C. A. Cairns**, passenger traffic manager, has been appointed general passenger agent and **John L. Ferguson**, general passenger and ticket agent, has been appointed assistant general passenger agent; **M. R. Leahy**, assistant general passenger agent, has been appointed assistant general agent; all with headquarters at Chicago.

**J. G. Morrison**, assistant to the vice-president of the Chicago Great Western, with office at Chicago, has been appointed assistant general freight agent, with the same headquarters. **C. R. Berry**, assistant to the vice-president, with headquarters at St. Joseph, Mo., has been appointed general agent at the same city. **F. P. Crawford**, division freight and passenger agent at Chicago, has been appointed division agent of the Eastern division, with the same headquarters. **W. C. Hine**, division freight agent at Ft. Dodge, Iowa, has been appointed division agent of the Western division with the same headquarters. **D. W. Quick**, division freight agent at Red Wing, Minn., has been appointed division agent of the Northern division with the same head-

quarters. **Loyd Joden**, division freight agent at Des Moines, Iowa, has been appointed division agent of the Southern division with the same headquarters. **C. L. Smith** has been appointed general agent in the freight department at St. Paul, Minn. Freight service agents have been appointed as follows: **T. J. Cleary**, formerly commercial agent, Waterloo, Iowa; **D. Northup**, formerly commercial agent, Omaha, Neb.; **J. H. Lyman**, St. Joseph, Mo.; **J. F. Kelly**, Des Moines, Iowa, and **L. N. St. John**, Kansas City, Mo.; effective August 15

The following assistant general freight agents of the Seaboard Air Line have been appointed division freight agents: **H. M. Boykin**, with office at Richmond, Va.; **C. C. Graves**, at Charleston, S. C.; **S. P. Stringfellow**, at Atlanta, Ga.; **R. W. Daniel**, at Birmingham, Ala.; **C. E. Muller**, at Savannah, Ga.; and **J. G. Cantrell**, Jacksonville, Fla.; **E. E. Hunter**, division freight agent has been appointed division freight and passenger agent, with office at Wilmington, N. C. The following service freight agents have been appointed: **F. H. Smith** and **C. E. Finch**, with office at Norfolk, Va.; **C. E. Thomas, Jr.**, at Richmond, Va.; **G. C. Poole**, Andrew Syme and **W. E. Whittemore**, at Raleigh, N. C.; **V. C. Tompkins**, at Hamlet; **J. H. Flythe**, at Greenwood, S. C.; **J. V. McCullough**, at Charleston, S. C.; **O. G. Donny**, at Columbia; **B. H. Hartley**, at Atlanta, Ga.; **R. M. Langston**, at Howells (Atlanta); **C. E. Felton** and **J. A. Henderson**, at Savannah; **F. G. Roberts**, at Cordele; **F. C. Cheney**, at Birmingham, Ala.; **E. P. Mills**, at Jacksonville, Fla.; **W. T. Vandenberg**, at West Jacksonville; **W. R. Canova**, at Lake City; **W. A. Fulwiler** and **T. P. Toland**, Tampa. The following service freight and passenger agents have been appointed: **E. W. Long**, at Charlotte, N. C.; **D. P. Hartley**, at Charleston, S. C.; **M. A. Calhoun**, at Columbus, Ga.; **J. Z. Hoke**, at Athens; **R. W. Morris**, at Birmingham, Ala.; **M. O'Connor**, at Montgomery; **C. A. Carpenter**, at Orlando, Fla., and **A. D. Williamson**, at Bradenton.

#### Engineering and Rolling Stock

**F. L. Thompson**, assistant chief engineer of the Illinois Central has been appointed chief engineer, office at Chicago.

**W. R. Roof**, assistant engineer of bridges of the Chicago Great Western, with headquarters at Chicago, has been promoted to bridge engineer.

**Earl Stimson**, engineer maintenance of way of the Baltimore & Ohio, eastern lines, with headquarters at Baltimore, Md., has been appointed general superintendent maintenance

of way and structures of all lines under the jurisdiction of **A. W. Thompson**, federal manager. Mr. Stimson was born at Cincinnati, O., on September 2, 1874. He was educated at Cincinnati University and at Cornell University, graduating from the latter institution in 1895. He entered railway service in June of that year as a rodman in the maintenance of way department of the Baltimore & Ohio Southwestern, with headquarters at Cincinnati. In 1896 he was promoted to assistant engineer, being transferred to Chillicothe, O., in 1898. In 1899 he was promoted to resident engineer of construction, with headquarters at Osgood, Ind., where he remained until 1901, when he was advanced to the position of assistant division engineer at Chillicothe. His promotion to division engineer took place in April, 1902, when he was placed in charge of the engineering work of the Springfield division at Flora, Ill. He was transferred to Washington, Ind., in May of that year where he remained until 1905, when he was made engineer mainte-



H. E. Pierpont



Earl Stimson

nance of way of the Baltimore & Ohio Southwestern. A further promotion to the position of chief engineer maintenance of way of the Baltimore & Ohio was given him in April, 1910. The title of this position was changed to engineer maintenance of way in 1912, and it is this position which he held at the time of his present promotion.

**S. G. Kennedy**, shop foreman of the Atlantic Coast Line, with office at Sanford, Fla., has been appointed general foreman at Lakeland, (Fla.) shops, vice **G. F. Richards**, resigned.

**T. E. Bliss**, assistant engineer on the St. Louis-San Francisco, at Memphis, Tenn., has been appointed district engineer of the Frisco lines east of the Mississippi river, and the Birmingham Belt, with headquarters at Birmingham, Ala.

**J. B. Myers**, district engineer maintenance of way on the Baltimore & Ohio, eastern lines, with headquarters at Baltimore, Md., has been made engineer maintenance of way, eastern lines, with the same headquarters, succeeding **Earl Stimson**, promoted, as noted elsewhere.

**F. T. Darrow**, engineer maintenance of way of the Chicago, Burlington & Quincy lines west of the Missouri river, with headquarters at Lincoln, Neb., has been appointed assistant chief engineer of the lines west of the Missouri river. The position of engineer maintenance of way has been abolished.

**C. L. Persons**, assistant engineer on the Chicago, Burlington & Quincy, assigned to special work on the chief engineer's staff at Chicago, has been appointed assistant chief engineer of the lines east of the Missouri river with headquarters at Chicago. Mr. Persons has been connected with the Burlington in an engineering capacity for the past 14 years, having entered the services of that company in 1904. He was first engaged in topographical work in connection with grade reduction on the line between Rock Island, Ill., and Galesburg, following which he was engaged in construction and maintenance work for about two years. From 1908 to 1916 he was locating engineer on the Lines East with headquarters at Chicago, following which he was appointed assistant engineer and assigned to special work on the chief engineer's staff, which position he held until his appointment as assistant chief engineer as noted above.

#### Special

**V. A. Riton**, general superintendent of the Eastern General division of the Norfolk & Western, at Roanoke, Va., has been appointed acting superintendent of the relief and pension department, succeeding **J. C. Snavely**, granted leave of absence on account of sickness.

### Railway Officers in Government Service

**A. F. Duffy** has been appointed assistant manager of the Safety Section, Division of Operation, of the United States Railroad Administration, with office at Washington, D. C., succeeding **W. P. Borland**, who is now chief of the Bureau of Safety, Interstate Commerce Commission.

#### Corporate

##### Executive, Financial, Legal and Accounting

**F. S. Peabody**, second vice-president of the Chicago & Illinois Midland, has been elected vice-president with headquarters at Chicago, and **H. M. Hallock**, general manager, has been elected vice-president with headquarters at Taylorville, Ill. The position of second vice-president and of general manager has been abolished.

#### Operating

**J. W. Bell** has been appointed general superintendent of the Chicago & Illinois Midland, with headquarters at Taylorville, Ill.

**T. L. Terrant**, formerly assistant superintendent of the Baltimore & Ohio, has been appointed superintendent of the River Terminal Railway, with office at Cleveland, Ohio.

#### Traffic

**George C. Martin**, general freight and passenger agent of

the Toronto, Hamilton & Buffalo, has been promoted to general traffic manager; and **Rowland F. Hill**, assistant general freight and passenger agent, has been promoted to general freight and passenger agent; both with offices at Hamilton, Ont.

**W. R. MacInnes**, freight traffic manager of the Canadian Pacific, with office at Montreal, Que., has been promoted to vice-president in charge of traffic, succeeding **George M. Bosworth**, who has been appointed chairman of the Canadian Pacific Ocean Services Limited, and will devote his time to the shipping interests of the company.

### Engineering and Rolling Stock

**G. W. Harris**, whose transfer to the staff of the president of the Atchison, Topeka & Santa Fe was announced in the *Railway Age* on August 2, has been appointed chief engineer to look after the interests of the corporation with headquarters at Chicago.

**W. W. K. Sparrow**, valuation engineer and member of the valuation committee of the Chicago, Burlington & Quincy, with headquarters at Chicago, has been appointed chief engineer in charge of the corporate interests of the Chicago, Milwaukee & St. Paul, effective September 1. Mr. Sparrow was born in Ireland on December 30, 1879, and was educated at Rossall, England. In 1896 he passed the examination prescribed by the Institute of Civil Engineers at London and during the same year he entered the service of the Belfast & Northern Counties Railway (Ireland), remaining with that company until 1898, when he went to South Africa to engage in railroad location.

W. W. K. Sparrow

construction and maintenance work on the Cape Government Railways and the Chartered Company of Rhodesia. From February, 1909, to July, 1912, he was in the employ of Waddell & Harrington, consulting engineers at Kansas City, Mo., as detailer, checker and designer. From the latter date until September, 1913, he was associated with H. von Unwerth, consulting engineer at Kansas City, Mo. From September, 1913, to April 1, 1916, he was assistant chief engineer of the Missouri State Public Service Commission, and on March 20, 1916, he was appointed valuation engineer and member of the valuation committee of the Chicago, Burlington & Quincy.

### Railway Officers in Military Service

**R. W. Kennedy**, assistant valuation engineer of the Atchison, Topeka & Santa Fe, at Topeka, Kan., has entered the United States army.

**Lieutenant Paul W. Leisner**, formerly chief draftsman in the bridge department of the Chicago & North Western, at Chicago, has been severely wounded in France.

**J. M. Grant**, engineer maintenance of way of the Chicago, Peoria & St. Louis, with headquarters at Springfield, Ill., has been commissioned a captain in the Engineer Officers' Reserve Corps.

### Obituary

**Stephen E. Clark**, district passenger agent of the Hocking Valley, with office at Toledo, Ohio, died on August 11.

**Edward C. Bates**, a prominent civil engineer of Boston, who was engaged in the construction of the Union Pacific and a number of other railroads, died on July 23 at his summer home in Ipswich, Mass.